Supervisory Management

APRIL 1958

SEVEN STEPS TO COST CONTROL

You can cut costs—and still improve production.

UNDERSTANDING THE INDIVIDUAL LEARNER

Teaching is less difficult when you realize that each person has his own way of learning.

FIGURES CAN FOOL YOU

. . . but you need them on the job. Some guides that will make it easier to use—and interpret—statistics.

"This I Believe..."

The Happy Paradox

By James P. Mitchell

U. S. Secretary of Labor

IN RESPONSE to the urge for advancement and the changing nature of their jobs, workers are seeking new skills and modernizing old ones. The nation realizes that our continued progress as an industrial society depends on this advancement.

This quickening interest in the enlargement of the individual presents us with one of history's happiest paradoxes. At a time that automatic machines and mechanized techniques are coming into widespread use, the skill of the individual worker has more meaning and value than ever before. Technology has not replaced people. It has placed greater emphasis on individuality.

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Supervisory Management

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By George S. Odiorne

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IT'S NOT HARD to understand why cost control and cost reduction are topics of the day in management circles, if you've kept abreast of the business news. On one hand, there is increasing pressure to keep market prices stable and prevent inflation. On the other, there's a steady rise in the cost of doing business—labor costs, materials costs, and the costs of services. These two jaws exert what economists call "the cost-price squeeze." In almost every company in every industry, this economic pincer movement has forced management attention toward cost reduction.

Cost control is often thought of as something only top management can do—through planning, programming, consulting cost-control experts, or simply insisting that reductions be made. But experience shows that cost reduction is effective over the long haul only when it is executed by the whole management group, including supervisors. Actually, with or without a company plan, there are few foremen or supervisors who cannot bring down costs within their own departments.

The process may start with a top-management decision. This should be backed up by accurate figures on

present costs per unit of production in each department, plus estimates of what reasonable standards of cost performance might be. With such facts and goals at hand, however, the execution and fulfillment of the cost-reduction program falls to the supervisor. Even when the process is not started by management, an alert supervisor, aware that low costs are a criterion of his performance, will find ways to initiate controls of his own.

The meat-axe approach

One reaction to the cry "We've got to cut costs" is to take the cleaver off the hook and hack away at everything that costs money—cutting every item, say, a flat 10 per cent. The foreman of a house-construction crew arbitrarily "saved" by omitting waterproofing from foundation walls. (The materials saving was slight, but the time saving seemed great.) The result: The homeowner was vexed with a wet basement, which he publicly attributed to "poor workmanship." When he later paneled the basement in an effort to keep out the damp, he gave the job to a different contractor.

Flat cuts across the board seldom produce the desired effect. Under such chopping, the purpose of cost reduction—using men, money, and machines *more* effectively—just isn't achieved. In addition to eliminating some (but not all) excesses and luxuries, it also lops off necessary *productive* costs. Therefore, the meat-axe approach provides only a temporary letup in expenditures and ultimately costs more than it saves.

The better way to trim costs is not to hack at them, but to sculpture them—to remove excesses without disturbing the essential production structure. This modern approach is based on teamwork—with the supervisor as pivot. There are seven steps to this kind of supervisory cost reduction:

Planning work

1. *Planning work:* A supervisor's first step in lowering department costs is to plan carefully and closely. He sees to it that his people have work all day, that his machines run during all scheduled hours. Then he organizes his department tightly, spells out what he expects of each worker, and groups his men for efficient operation. Building up efficiency may require training and retraining, in the fine points of each job, as well as the general procedures.

Further, the supervisor tries to improve his own performance. He uses the standard tools for planning—check lists, flow charts, and duty rosters. Then, after he has his system streamlined and operating, he can control it through the *exception principle:* He lets the routine take care of itself, attending only to exceptional matters. This is like the army sergeant who, checking his men by looking down the ranks, can spot the incorrect uniform at a glance.

The right people

2. *The right people:* The cost-conscious supervisor makes certain that he has placed the right people in each job. Proper assignment procedures may depend on little more than the physical requirements of the job, but even these apparent (if often overlooked) details should be considered. One department-store manager, for example, makes sure that wrapping clerks with the longest reach serve departments with the bulkiest parcels!

The most important criterion is, of course, to assign employees according to their abilities and put them in spots where they can use their highest skills. (Besides yielding greater efficiency, this also makes for happier workers.) Certainly, a good supervisor doesn't waste highly skilled—and expensive—talent on details that less skilled people can perform. One maintenance foreman, discovering that his mechanics were spending several hours daily lubricating machines, assigned a greaser to do it for them, thereby increasing the mechanics' productivity at their special jobs.

Training workers

3. *Training workers:* "If you don't have them, train them"—because costs go down when skills go up. Improving employee skill—either by raising performance levels or building versatility—is the third step in cost reduction. This includes adding to employees' job knowledge, coaching them to help them sharpen their skills, and converting negative work attitudes into positive ones. Another specific training goal—one that really pays off in a pinch—is to increase the number of people able to cover crucial jobs. This will prevent confusion and down time caused by the tardiness or absence of a key employee.

Effective instruction is methodical, department wide, and continuous. While it demands lasting attention from the supervisor, it pays a triple dividend by increasing efficiency, building employee morale, and heightening loyalty to the company. After all, few employees will improve their performance unless they are told quite specifically what is expected of them and how they are doing. This means praising good work as well as discussing errors.

Correct training also encourages employees to speak up—to the department's advantage. Secretaries who were taught how to handle incoming telephone calls in a busy sales office remarked: "We put 95 per cent of all calls through to the boss anyway—he's the only one who knows the answers." As a result, some managers agreed to answer their own telephones. Others agreed to delegate more to their secretaries, thus making it possible for them to handle some of the incoming calls.

Building teamwork

4. *Building teamwork:* Such cooperation between managers and staff indicates the importance of

teamwork. As a supervisor, your job is to solve problems as they arise. You expect people to seek your help—just being available is important. But demands for only *your* help in solving problems will become less, and the general effectiveness of your organization will rise, in direct proportion to your ability to build teamwork.

A second baseman who knows only how to scoop grounders to the right of second is less valuable than one who can work with the shortstop on a double play. But the team manager must do more than "hope" his players will cooperate and more than just tell them to do so. He must know the game, and point out the areas for possible cross play.

A secretary who covers another's telephone while she is away from her desk may prevent a customer from becoming disgruntled and taking his business elsewhere. Machine operators who can cover another man's job during a smoke break can eliminate down time on that machine. In some departments, team efforts of this kind spring up spontaneously. In others, smart planning and adroit human-relations skills are required of the supervisor.

Maintenance control

5. *Good maintenance control:* A good production supervisor is interested in maintenance, even if he's not directly responsible for it. He knows that inadequate maintenance can ruin his cost record.

An immediate way to contribute to better maintenance (and lower costs) is to make certain that the equipment is used properly. Every foreman of painting operations knows exactly what to expect, for instance, when a new employee hears the five o'clock whistle and runs off, leaving spray guns uncleaned on his bench.

Similarly, supervisors should make certain that equipment is *functioning* properly and that even slight mechanical difficulty is reported at once. Another effective device is to dovetail repair schedules with production schedules. If you have four machines, for example, plan on half a day's down time for each one every month, say Thursday afternoons in rotation. This allows convenient—and pre-established, rather than accidental—dates for overhaul and preventive checkups.

Replacing equipment

6. *Equipment replacement:* Another fertile field for cost reduction is replacement of slow or inefficient equipment with new, cost-saving machinery.

The decision to replace equipment is usually made by top management. But supervisors and foremen have more influence here than they realize. They are in the best position to observe wastefully inefficient or obsolete machinery. And higher management will usually pay serious attention to supervisory recommendations, even if the purchase is not authorized right away.

Again, when new equipment *is* being considered, the supervisor can warn engineers and top management of pitfalls that might cause a rise, rather than a reduction, in costs. From his close personal knowledge of operations, the foreman can often advise if the new equipment will tie into the line or work center, if it has the right capacity or will fit into available floor space, if the company has men capable of operating the proposed piece (and mechanics to maintain it), and if existing machinery really calls for replacement rather than a sound overhauling or modification.

Engineers in a New England company recommended buying a new punch press until the department foreman pointed out that its weight exceeded the rated floor capacity by 3,000 pounds, a factor that hadn't been considered. "You'll have to shore up the floor," the supervisor warned; this expense would have cut substantially into the expected savings. The engineers were able to modify their plan in time.

Employees' ideas

7. *Employees' ideas:* Even after all these plans are in operation, further savings are still possible. Keep your eyes open and, if you have a good team, ask and encourage employees to suggest improvements. Ideas of the people closest to the job, the workers themselves, provide perhaps the best—and certainly the greatest—area for cost reduction.

One day a worker asked his superintendent why holes were drilled in the ends of the brooms. "So you can hang 'em up," was the answer.

"Yes," the employee replied, "but *where* in this factory do we ever hang them up?"

Subsequent investigation showed the company was paying an extra price for the brooms with this unused feature. In a multiplant operation, even the small economy of buying regular brooms amounted, on an annual basis, to savings that were impressive.

Employees can suggest improvements in materials handling (like eliminating a carry between two machines) and in work procedure:

A machine operator in a metalworking operation thought that the irregularly shaped patterns would dovetail if every other row were upside down. His idea saved two inches of material on each row stamped —an amount equal to some 30,000 tons of metal, or $15,000 a year. His boss rewarded him—and encouraged similar proposals—by nominating the man for an employee-suggestion bonus, which was quickly granted.

Workers' cooperation is a necessity, too, in utilizing machinery fully: In an Eastern pharmaceutical plant, managers had complained about down time, caused by slow delivery of raw materials from storage to production areas. A study showed that all trucks were in motion almost all day long, so management investigated the possibility of ordering

a new fork-lift truck costing several thousand dollars. But one driver pointed out that, although he was always on the go, his truck was empty half the time—on return trips, for instance, or on junkets to widely separated pickup areas. He suggested that a two-way radio be installed in each vehicle to control routing. The system was investigated and proved much cheaper and much more satisfactory than buying a new truck.

Similarly, workers can have valid and valuable comments on such diverse areas as packaging and shipping and even product design. Listen to them—and, incidentally, remember that employees make better suggestions when they know what the needs are and what's going on. It really pays to keep them informed.

To repeat, it's not hard to understand why cost control and cost reduction are topics of the day in management circles. Truly progressive supervisors, far from avoiding the issue, relish having their performance measured on a cost basis. They know that the profit motive is, after all, the basis of survival—as well as growth—for their companies. More personally, they also realize that it is directly related to their progress up the managerial ladder.

"Sometimes I wonder about those fringe benefits."

UNDERSTANDING THE *Individual Learner*

By Lynn E. Castle
Sandia Corporation

IN GETTING OUT A PRODUCT in the shop, the supervisor thinks about materials and processes. In training, his attention is upon men. Just as he has come to know steel, brass, and plastics to do the production job, he seeks to know his men's feelings, abilities, and attitudes to do the instruction job. He observes his men and talks with them. He notices what they do. He attempts to analyze their actions. He listens to their comments and encourages them to talk. The more nearly he can come to knowing each one as a person, the better he can train them.

Understanding people is not a simple process. The supervisor who says, "I can size up a man as soon as I put him to work" is usually deceiving himself. Here are some of the habits of self-deception that hinder us in understanding people.

Hindrances to understanding

The "die-casting" habit—Too often, as we observe individuals, we sort them into types, or force them into shapes we have set up in our minds, much as the die caster squirts metal into different kinds of molds. We feel that we have completely catalogued Bob Jones when we say that he is a "good mixer," that we have defined Tom Smith when we put him down as a "tough customer." But people cannot be sorted out so simply.

The "replica" habit—"He re-

minds me for all the world of Bill Brown," we say, and thereafter notice most easily the traits that are like Bill Brown and ignore those that are different. Once we have decided he is "like Bill Brown," we stop studying him, and we never discover many of his special interests and abilities.

The "go, no-go" habit—"I can tell whether a man will be a good operator as soon as I see how he follows directions," said a supervisor. "If he listens carefully, and does the job exactly as I tell him, he will be a good operator. If he doesn't take directions, but tries to dope out his own way of doing it, he seldom learns to do good work." This supervisor is classifying all employees into two groups: those who follow directions to the letter, and those who try to figure out methods of their own. His gauge is two valued—"go" or "no-go."

But people are seldom "either-or." Trait studies of individuals show that approximately two thirds of them have each of several commonly observed traits to a moderate degree; only a small percentage have markedly large or small degrees of any trait. Not "either-or" but "the degree to which" should be the guiding concept in studying people.

It is easy, also, to fall into the habit of judging employees solely by how well they do the particular phase of the job in which the instructor prides himself, overlooking their skill or lack of skill in other important parts of the work. For example, in one assembly-and-adjusting job the instructor had worked out a better way of tensioning a small spring. He took pride in this, and he judged workers almost entirely by the way they tensioned the spring. People are too complex to be measured by any single gauge.

The "formula" habit—Closely related to these stereotyped ways of looking at people is the practice of dealing with each "type" of person in a set manner. It has been said that the way to handle the "old-timer" is to let him alone; that the best way to get along with the "chronic kicker" is to lay down the law.

Of course, these approaches work a good deal of the time with many people; otherwise they would not be so commonly accepted. But when applied inflexibly, they break down.

People cannot be handled like piece parts or apparatus. Stereotyping them, classifying them, standardizing them, or reducing them to formulas—habits that work well with things—often prove to be hindrances with people.

The "standardization" habit—Supervisors may become so accustomed to thinking in terms of standards that they look only for *common* responses, abilities, and peculiarities of individual employees. Yet it is these special characteristics that yield clues to effective instruction. The ways a person is different, and especially the ways he is superior, furnish the key to his highest use-

fulness—because he tends to develop strong interests in the fields in which he has ability.

Studying the employee as a learner

How can the supervisor understand a new employee well enough to train him successfully? He can talk with him, question him, observe him, throw out conversational leads to draw him out, listen to him, and think and listen and think, constantly seeking to look behind appearances and first impressions, into the background of feelings, sentiments, and other reactions to experience which make up the man.

The instructor can use nine questions in his study of each individual he has to train. In using each question, however, he must ask also: "To *what extent* does he do this? In *what degree* is this true of him? *How important* is this aspect? *Why* does he react this way?"

Here are the questions:

1. Does the learner overlook parts of the job at first?

Does he, at the beginning, miss part of the instructions for the new job? Most likely he does. Does that mean he is stupid or careless? Not at all. The human mind has a convenient way of avoiding overload. If parts of the situation are unrelated to his experience or interests, he pays no attention to them. If the total situation is complicated, he first grasps only those aspects that interest him most. If his experience with these is satisfying, he soon explores further.

The instructor can help—first, by noticing the points he seized upon at the beginning, as cues to his interests, and relating the rest of the instruction to these interests; and second, by noticing what points the worker missed and bringing these to his attention as soon as he is ready.

2. Does the learner fail to understand instructions?

Does he misinterpret them? Does he fail to catch the point? It is easy to label such a person "stupid" and avoid responsibility for making him an efficient worker. But most workers who have passed the employment office are intelligent enough to learn the jobs to which they have been assigned. Their failure to understand is caused by *narrowness of experience*.

The worker whose slow learning is caused by narrow experience can be trained, and he often makes a superior operator. Cues to his background and interests may be found by encouraging him to talk about the job and by paying attention as much to what he takes for granted as to what he says. Gaps in his background can be filled by shop experience.

The worker who misinterprets instructions is often a similar problem. He doesn't want to let on that he hasn't fully understood; so he guesses. When he guesses wrong he makes mistakes. The remedy is to

make connection with his limited experience by finding out as much about it as possible, and to win his confidence so that he is willing to ask questions. It often helps to have him repeat instructions: "Now just to be sure I've made it clear, tell me what you're going to do."

Ignorance is by no means confined to new employees. Picture, for instance, an experienced employee transferred from a distant department, trying to adjust himself to a wholly new kind of job.

3. Does the learner's attention wander from the job?

Most people find it hard *not* to pay attention to what is going on around them—especially noises and people. In the absence of ideal conditions—including a quiet, private room—the new worker, besides mastering his skill, has to become accustomed to a new situation that is strange and interesting.

Complete absorption in a task and disregard of surroundings do not come naturally. They are an achievement—that is, they can be learned. Fortunately, it doesn't take long. Placing a worker in a less exposed location will help, if he is unusually sensitive to distraction.

4. Does he learn from his mistakes?

Every learner is likely to make mistakes until he has mastered the skill of the job. Often his mistakes are costly. We can avoid them by teaching him the easier parts of the job first. But costly as they may be, errors are good teachers. All learning of skills is partly a matter of trial and error, or trial and success. The learner tries to do the job, capitalizes on the times when he happens to do the right thing, and analyzes his mistakes—that is, if he has the help of a good instructor. These steps are not easy for the learner alone, because: 1) He may not recognize the parts of the operation that he did correctly. 2) He may not be able to recognize his mistakes. 3) He may become frightened at his mistakes, overestimate their seriousness, and wonder if he is about to be fired. In this state of mind he may not be able to analyze or discriminate and may learn nothing but to shy away from the part of the job in which the mistake occurred.

Under these circumstances, the instructor can help or harm, depending on his attitude toward mistakes.

It is especially important to correct errors promptly, because every time an act is repeated it becomes harder to change.

5. Does he try to devise new ways to do the job instead of following directions?

Supervisors sometimes become disturbed at this. They feel that the new man is unlikely to find a better way of doing the job. They are often right, but that is beside the point. Experimenting is a natural way of learning. No matter how clear the directions, no matter how obviously the job is demonstrated,

the learner must do it for himself, in his own way, before it becomes his skill. Even what appears to be sheer imitation is really re-creating each part of the act in his own mind and muscles. Only by making it his own does he learn it.

The learner usually tries to make his own actions as nearly like his instructor's as he can. But certain details may escape him. So when he comes to a point where observation failed, he improvises or experiments to fill the gap. If he guesses right, the instructor never finds out that he has "invented" that part of the operation for himself. If he guesses wrong, he will have to unlearn that part and learn a better way.

How can unfruitful experiments of the learner be reduced to a minimum? By seeing and understanding the operation more clearly, and by short trials closely supervised by the instructor. Mere telling is not teaching. The learner's attention must be directed to every detail of the operation. He should be told the reasons for doing the operation that way. And in early trials, the instructor can watch out for parts of the operation he may have missed.

In teaching "the right way" the instructor should be careful not to undermine the learner's constructive curiosity about the job. The entire history of industry demonstrates that there is no final "right way" to do a job. An experienced worker —and sometimes even a learner— can often come up with an improvement.

6. Does the learner lack interest in the job?

Does he fail to put forth the necessary effort? A man will be interested in a job if he feels that it is in harmony with his own purposes, that it is getting him somewhere. If he can identify the job with himself, see its connection with his ambitions, then he is interested in the job.

But often the new worker cannot see any relation between his own plan for the future and the job to which he is assigned. The supervisor can explain how upgrading takes place and what avenues of advancement are open to him.

One clue to the worker's interest is some activity that he enjoys for its own sake. A supervisor can discover what the worker likes to do and can often relate his job to his interests and hobbies.

The learner's interest will be stimulated by knowledge of his own progress. People like to beat their own records, to see themselves grow in skill. But progress in learning does not always register in daily output. While learning correct "form" and developing the ability to reach quality standards, output may not show a daily increase, and the worker should not judge his progress by it.

The effectiveness of these ways of relating the worker's interests to

the job lies in the fact that a man reacts as a whole. His whole self is being trained by every experience he has. We teach the man, not his hands or his brain. When he has mastered a skill, the whole man has it, uses it, and is proud of it.

Another key to interest lies in the job itself, in seeing its relation to the whole manufacturing process. Many instructors make it a point to tell the operator how his product will be used: "This goes into an airplane to show the pilot so and so. . . . " "This goes into an instrument panel. . . ."

In the same way, a worker has more interest in his machine if he understands how it works, what it can do, and what it cannot do. Then, instead of blindly following directions, he takes an interest in the machine. It becomes *his* machine, and thus his interest in the job is stimulated.

7. How does the learner respond to recognition?

Does praise stimulate him? How does he take criticism?

Experienced supervisors know that a little recognition stimulates a man's efforts. This is especially true of the learner.

Recognition of good work can be given in many ways. Posting progress records is one. Advancement to a harder or more important job stimulates a learner just as it does an experienced worker. Whenever he is ready for a more difficult step, the supervisor can say, "You've done well with that. You're ready for this harder job now."

The most tangible form of recognition is, of course, the weekly pay envelope. An increase in rate is a visible goal. But other forms of recognition are also necessary. Occasionally asking an advanced learner to instruct is a form of recognition. It adds prestige and gives stature to those who are competent.

Praise in the presence of the group is an effective form of recognition, as long as it is fair. It is stronger than private praise, but more difficult to give, because the members of the group tend to make comparisons. Criticism should always be given in private, or at least in the semiprivacy of shop noises. Given before the group, it results in confusion or resentment, which hinder learning.

The new worker is seeking the right way to do each part of the job. When he finds a right way, and the instructor approves it, he *knows* he's got that part of the job, and seeks to repeat it. At the same time, he experiences a glow of satisfaction which spurs him on to master other parts of the job. But suppose he tries a wrong way and is bawled out? What has he learned? Simply that that one way is wrong. He still does not know the right way, and meanwhile he feels discouraged. (The alert instructor will, of course, seize such a moment to demonstrate again the

right way of doing the operation.)

The best criticism is self-criticism. The instructor can ask the learner what is wrong with the way he is doing the job. He can help him analyze his work by asking, "Is this part right?" "Did you do thus and so?" or "Could you have done this another way?"

8. Does the learner stand on his own feet?

Does he lean on the instructor too much, or go to the opposite extreme and act as if he knows it all?

Most new workers lack confidence to varying degrees. They show it in curious and contradictory ways. A little fear when facing a new situation serves to arouse most people to greater alertness and effort. They are able to rise to the occasion and overcome their fears. Many learners run the whole gamut of reactions to some degree before they gain balance in the new job. Remember not to cast people into molds. Notice the *degree* to which people do these things.

The supervisor can often add to the timid learner's confidence by pointing out his successes, or he can bring a bluffer back to reality by facing him with the demands of the job. He is interested in each worker's reactions to the job and to his fellow workers, because they are facts that affect his learning and doing the job.

9. Does the learner seem ill adapted to the job?

In spite of the best efforts of supervisors and personnel organization, employees are sometimes placed on jobs they cannot do satisfactorily. Two cautions are in order here.

First—Do not assume that an employee is a misfit until he has been fully and correctly instructed and has shown that he cannot do the job. Many men have been called misfits on jobs they never had a fair chance to learn. Often a slow learner develops into an excellent operator.

Second—Do not assume that if a worker can't adapt to one job, he is useless. Any supervisor of long experience could tell stories of "misfits" who found other places where they made good. It is up to the supervisor to see that the worker either learns the job, or gets a fair trial at another job for which he is better suited.

Observe and study

The successful instructor will try to understand each learner. He will:

- Avoid stereotype thinking—study each worker as an individual.
- Notice the degree to which each learner has difficulty in concentrating on the job, watch for evidence of distraction.
- Size up the learner's alertness and his experience.
- Note the degree to which the worker seems to learn from his own mistakes, and how well he can follow directions.
- Study the interests of each learner, and seek to discover how

they may be correlated with the job.

• Observe the learner's reaction to the opinion of others and the degree of his self-reliance.

• Study the "misfits" to assist in their successful adjustment.

The supervisor who observes and studies his people in these ways will be able to help them learn their jobs more rapidly and effectively, because his efforts will be intelligently applied. ♦

Give Your Workers What They Need

SATISFYING ON-THE-JOB NEEDS of the worker is one of the best ways to improve morale and increase production. Willard Erickson, of the University of Chicago's Industrial Relations Center, cites these as the five most important factors in job satisfaction:

1. Employees want to be proud of their company and management.
2. They want to feel that their immediate supervisor is competent.
3. They want material rewards, but wages are the least important incentive, as long as they are in line with those for similar jobs elsewhere.
4. They want congenial fellow employees.
5. They want the job to be interesting and enjoyable.

How can you improve the atmosphere of your department in order to satisfy these needs more completely? Here are the six most commonly used methods:

1. *Improve communications* to show that the company and its managers are worth working for.
2. *Eliminate company bottlenecks.* Most employees get as irritated as management does at poor departments, incompetent workers, and bad work.
3. *Supervise thoroughly*, but fairly.
4. *Make up job descriptions.* Most men like to know the boundaries of their responsibilities.
5. *Improve the physical environment*—investigate lighting, cleanliness, working space, and safety precautions.
6. *Improve discipline.* Most workers welcome reasonable rules reasonably enforced.

—*Steel*

HE WHO IS of a calm and happy nature will hardly feel the pressure of age, but to him who is of an opposite disposition, youth and age are equally a burden.

—PLATO

By Lawrence A. Appley

President, American Management Association

DOWN THROUGH many early centuries, the leader was clearly a dictator, an autocrat, a one-man operator who knew all the answers. He was a dynamic, determined, concentrated individual who ruled with an iron will over small groups or great multitudes of people.

History records all kinds of revolutions against and refusals to accept this kind of individual domination. Many of these have been bloody, some have been underground. They have been so prevalent and so effective, however, that that kind of leadership is no longer acceptable and is quickly identified as undesirable and outmoded by our society.

This violent human reaction against the single will resulted in a gradual swing to what is popularly known as group dominance. Group dominance is based on the theory that the group knows more than any individual member of it and, if given the proper opportunity, will express itself in terms of the best interests of its members.

This means that each individual loses himself in the identity of the group, obtains participation from the group, and ultimately receives from group action something better than he would have received—or even desired—as a result of his thinking alone.

The scale has swung so far in

this direction, in some cases, that the group has sometimes become a haven for incompetence. It has generated either actual "softies" or a concept that a leader must be a "softie" if he is to be a servant of the group. There are now evidences of reaction against this group-leadership approach just as there were against the individual approach. It is important, therefore, before we lose something good, that we get it into its proper perspective.

Just as one-man dictatorship is an undesirable extreme, so is a leaderless group. The truly desirable leadership situation seems to be a strong individual who is fully conscious of the value of other people and earnestly seeks their thinking and contributions, but who also has the courage to make a decision when it should be made, even if it is contrary to the opinion of the group.

While the dictator consults no one and the group tries to manage itself, the more effective manager uses the group for full consultation, advice, guidance, and participation, and then exercises his own best judgment. The dynamic group leader is a master of timing. There comes a time when a decision has to be made, when action has to be taken. A group may discuss forever unless somebody determines that the time has come to do something.

Consultative supervision requires brains, understanding, and skill to tap the experience and thinking of others as well as the competence and courage to move in accordance with one's own judgment when the time is right. It also requires considerable humility, human understanding, and a sense of the value of individual and group discipline, plus firmness.

Full effectiveness of that kind of leadership, which stands out clearly between the two extremes of despotism and group dominance, rests on confidence in one's own judgment. This does not mean "I am always right" or "Right or wrong, I am never in doubt." Many people who stand stubbornly for their own viewpoints are only reflecting an inner lack of confidence in them.

Making a decision is exercising judgment, and this is the essence of management. A person who is skilled at making decisions is obviously a better manager than one who is not. To be skilled, one must understand all the various component parts and processes that go into the making of a good decision, and one must continually make decisions. Decision making is like playing golf—the more you practice, the more competent you become. Those in management must be constant students of the decision-making process and of its impact upon the exercise of their responsibilities.

But competence in decision making is not to be found in the man who always wants to be identified as the decision maker. The manager who is able to get others to arrive at a decision that he thinks right, and to let it become their decision, is also able to get others to understand and accept the decisions that have been made. ♦

. . . unless you're wary of the ways in which they can be misinterpreted.

By William Ruchti

TWO FOREMEN of adjacent departments were talking things over at lunch.

"Last quarter, I lost six men, but this quarter, only four quit," one explained. "That means turnover in my department has dropped a third."

"That's not the way to figure it," his friend replied. "How many quits did you have for this quarter *last year?*"

"Only two."

"Well, if it was two last year and four this year, your turnover hasn't gone down at all, you dope! It's gone up—by 100 per cent!"

Both men were talking about the same thing—turnover statistics for a single department. And both were correct in their figuring. They disagreed, however, because each was comparing this quarter's turnover with a different period. Such confusion, often created unintentionally, has lent force to the saying,

"There are three kinds of lies—lies, damned lies, and statistics."

It's a good idea to know how statistics *can* fool you and, on the other hand, how they can serve you by pointing out the truth. Supervisors especially need to understand statistics because they deal with them more often than most other people. When you're basing a decision on a set of figures you want to be sure you know what the figures mean.

Slanting statistics

Statistics can be slanted by the very way they are phrased. Suppose you read such a statement as, "Electric power is available to two thirds of Russia's farms today." First off, this does tell you also that electricity is *not* available to a third of the farms. But, in general, it sounds as though rural development were galloping across the steppes.

Take another look, though. Just what does "available" mean? Does it mean that electricity is delivered right up to the farms? (If so, do the farmers take it from there and do they actually use it?) Or does it mean simply that power lines go somewhere near two thirds of the farms? (If so, is the distance a rod, a mile—or a hundred miles?) Using words like "available" allows you to imply almost anything you choose —without committing yourself to anything.

Statistics can also be made to look better or worse, by slanted comparisons. You can express a single profit figure in many ways: as a 3 per cent return on sales, a 15 per cent return on investment, a $6 million profit, a profit increase of 200 per cent (as compared with a depression year) or a profit decrease of 12 per cent (as compared with a boom year).

You can also cloud the issue by confusing the *number* of occurrences with the *rate* of occurrence. Suppose you read that in 1956, some 2 million industrial workers were injured or killed by on-the-job accidents, in contrast to only about 300,000 farm workers. Better move to a farm if you don't want to be maimed for life!

Yet, these numbers don't tell the story. There are few people working on farms, and their accident *rate*—45 per 1,000 workers or 4.5 per cent—is actually higher than that of industrial workers. The overall industrial rate is only 3.2 per cent. Before you accept a comparison of figures, then, check on the total population each pertains to. In other words, prorate it.

There are other favorite devices for misrepresentation. A common one is the "sworn laboratory report," on tests conducted by "an independent laboratory." Often such a report can be trusted completely, but sometimes it cannot. "Independent," in such cases, may mean only that the laboratory is free from control by any regulating authority and therefore probably less trustworthy than if it were responsible to a scientific foundation, government agency, or college.

The method used in many of these tests is to take a simple, inconclusive experiment and run it until you get the answer you're looking for. If, for instance, you want to show that a laundry product is less irritating to the hands, hire ten women to dip their right hands in your product, their left hands in another product. If this doesn't work out the first time, discard the results and start again. Sooner or later, you're bound to find that "six out of ten women report that [your product] is definitely less irritating."

The laboratory can seize upon that one result, sign a "sworn statement," and deliver the word to the manufacturer or ad agency. These reports will often omit important information like how long the product was used and how the test was conducted. Seldom, if ever, do they define the sample; i.e., the ten women supposed to represent 37 million American housewives.

The sample

The sample—or group considered in a survey—can be deceptive. This error may not be intentional—in fact, it is quite an art to obtain a representative and unbiased sample.

For instance, suppose you mailed a questionnaire about current jobs and work success to former employees of the company. Even if 65 per cent answered, your sample would probably be biased. It would overrepresent the more successful people and those who left the company under favorable circumstances.

Why? First, the respondent has to take the initiative in replying; the sample, then, is "self-selected." And who, logically, is most likely to respond? Those who have jobs they are proud of. Who is least likely to answer? Those who haven't advanced much or have retrogressed—and would prefer not to say so. What's more, former employees who nurse a grudge against the company would tend to throw the questionnaire away without a second thought about replying. Finally, some ex-employees—often those who are less conscientious or less careful—would have moved away without leaving forwarding addresses. Your letter won't even reach them. Thus, your sample will contain a built-in bias.

How *do* you establish a sample, then? Theoretically, you acquire a list of the entire population, take every tenth—or hundredth—name, then interview that person with carefully prepared questions, some of which are intended to cross-check answers to other questions. Some professional pollsters do try to obtain such an over-all sample when they conduct national opinion surveys. Others break the total population structure into divisions—adults or children, males or females, rural or city dwellers, and the like—then try to establish a small cross section that reflects comparable groupings in the same proportions.

The pollster's greatest problem is, in fact, his sample—eliminating as much distortion as he can and recognizing the bias that remains. It's a running battle and one that is never quite won—as was shown by Harry Truman's election in 1948, despite contrary predictions by all the opinion polls.

Therefore, the next time you read that "43 per cent of the American people say such and such," ask yourself, "43 per cent of *which* American people?" Careful statisticians tell you by defining their samples.

Charts and graphs

Be wary of statistics presented quickly—and sometimes too easily—by pictures. There's nothing wrong with chart presentations of statistics. It's a fine way to get facts across. But charts can also be used to distort or conceal data.

Take the above-mentioned example of electricity in Russia and show it on a map. You could color every area that is within a mile (or, while you're at it, a hundred miles) of an electric conduit. They all carry electricity, so what's the difference if it's a power line, a telephone cable, or a railway's third rail? Thus, your map would show vast areas in color, and you could label it patly, "The availability of electricity in Russia." If that isn't sufficient, add a green triangle for every dam, generator, or power-and-light office. But be sure to omit revealing descriptions or data.

Distortions crop up in charts and graphs, as well as in maps. By plotting only averages and omitting extremes, a graph of Minnesota weather, for instance, would hover in the pleasant temperate ranges—without indicating the hottest summer heat or subzero winter temperatures.

Or take a comparative pictograph—like two identically shaped bags of money to indicate costs before and after—and double the height of the second bag to show a twofold increase. Since the picture is two dimensional, however, the width of the bag is increased, too. Thus, the second money bag is actually *four* times the size of the original. To illustrate an increase (or decrease) pictorially, then, remember to calculate the pictograph in terms of total area, not just height (Figure 1).

Figure 1: *Not this . . .* *. . . but this*

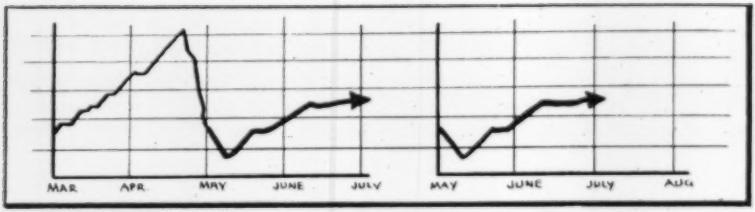


Figure 2: How to make the most of a peak

Other tricks with graphs are:

1) *Showing only one segment* without relating it to the whole: Your department's production was really up there months ago, but then fell into a deep slump before starting a climb back toward near-normal levels. In graphing it, omit the peak and show only the slump, plus the apparent recovery. "Here," you could say, "is how I pulled things out of a tailspin." But you give a false impression by concealing the fact that production still is lower than it was (Figure 2).

2) *Cutting off parts of the grids:* If your monthly volume of sales shows a slow but steady rise from 25,000 to 26,000 units, you can make it look more sensational by cutting off the blank areas below the curve and also above it. What looked like an unimpressive rise now looks impressive. The facts remain the same, of course—but they look different! The same gimmick works on bar graphs (Fig. 3). Slight changes are magnified into apparently important differences if you show just the ends of the bars.

3) *Changing the proportions of the graph:* (Figure 4) If you want to make the sales curve really jump, here's the way to do it: Have the scale along the ordinates (up the side) represent, say, only a tenth as many units as before. Now your slow rise from 25,000 to 26,000 leaps vertically off the paper.

If you want to minimize it, do the reverse. Make the ordinates represent five times what they did before and the curve will seem to rise slowly and gradually.

The best way to avoid swallowing such bait is to know how to use

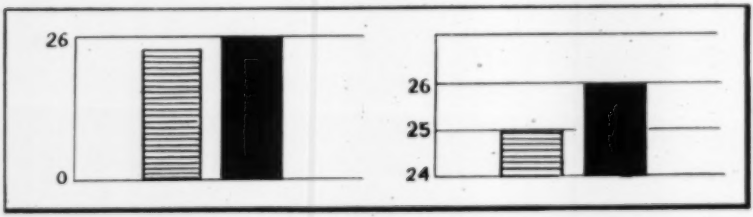


Figure 3: Making a rise look bigger

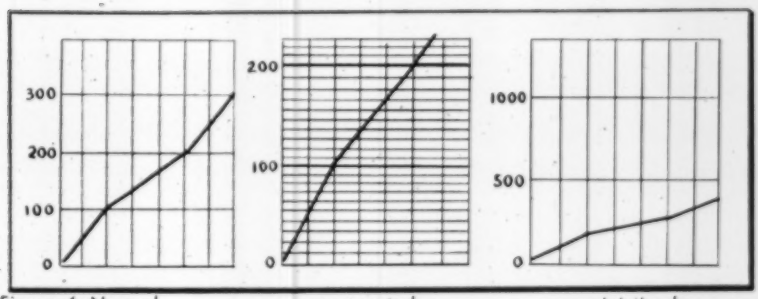


Figure 4: Normal . . . exaggerated . . . minimized

numbers and statistics properly. So let's start at the beginning:

Using statistics properly

By themselves, numbers mean little. The number ten, by itself, has only abstract meaning. But combine ten with dollars—$10—and it begins to take on substance. It will take on still more if you compare $10 with something else in the same category—say $10 and $5—but it can become confusing if you compare the $10 with something in a different category—say $10 and an oak floor.

Numbers have to be identified, defined, and compared to make sense. Statistics are intended to do that. In fact, the very word "statistics" implies classification, system, and relationship—statistical science is defined as collecting, classifying, and using numerical facts on the basis of occurrence.

Straight percentages

The most common method of comparing numbers is a straight percentage. To get it, you simply divide the figure that represents the *part* by the figure that represents the *whole*, then multiply the quotient by 100. An elementary example is that 30 is 60 per cent of 50. (Divide 30 by 50 and multiply by 100.) That is a straight percentage.

The value of a percentage is that it compares two numbers in terms of a well-known constant, 100.

In your department, for instance, you can find what percentage of your production is rejected as faulty by dividing the number of rejects by the total output of your department, and multiplying by 100. A reject rate of only .1 per cent could perhaps be ignored, while a 10 per cent rate might prove significant. But there is another factor to consider—your product. If you turn out hand-constructed luxury sailboats that sell for $25,000 apiece, a 10 per cent reject rate would be costly indeed, if not disastrous. But if your factory grinds out toothpicks (and you simply convert all rejects into quickly salable wood pulp), 10 per

cent might be a practical reject rate. In judging significance, then, you rely largely on a common-sense consideration of all pertinent factors.

The average

There are three types of averages, all quite manageable. To get the commonly used *arithmetic average*, you total all parts, then divide the sum by the number of parts. This figure is useful for making simple comparisons of things that are, on the whole, pretty much alike.

If you collect for a charity drive in your company, for example, it might be misleading to report that Department A contributed $60, Department B, only $12. Department A may have 30 workers, Department B only 4. By figuring the average donations, you'll be able to report that Department A employees gave an average of $2 each; Department B, $3. Now the report gives a clearer idea of the contributions.

But averages can be tricky.

Consider five men, all of whom live on the same block. One earns $7,500 a year; another, $6,000; the third, $6,500; the fourth, $6,000—and the fifth $64,000! The average salary on this block would figure out at $18,000. Yet this doesn't make sense because four of the five men would be earning "below-average" incomes. Including the outsize income with the others throws out the average. When averages include widely different examples—especially if the number of examples is limited—results tend to be deceptive.

One way to avoid this is to take a broader sample. But what if you can't? There must be another way.

There is. It's called the *median* and it's useful in comparing a series of widely differing examples. To find the median, arrange the values according to size, then take the figure that falls in the middle; if there are five figures you would take the third; if there are 51 figures you would take the twenty-sixth.

The incomes cited above would be arranged this way: $64,000, $7,500, $6,500, $6,000, and $6,000. The median (or middle figure) is $6,500. Now when you compare the salaries of these five men, you can say their median income is $6,500. It yields another idea of the relationship. Most people to whom you say this will know that half the men earn more than $6,500; half, less.

The third way to compare figures in a series is the *mode*. It is, simply, the figure that occurs most often. It tells which figure is "average" because it occurs most frequently. Comparing the salaries this way, you would say the modal (or most repeated) income is $6,000. Modal averages have an obvious importance to people interested in common standards, like clothing manufacturers. They don't want to make arithmetically "average" garments, but clothes—and sizes—that will actually fit the greatest number of people.

A frequent, though often unin-

tentional, error is to compare averages that cite the median for one and the mode for another. It's like measuring the height of one six-foot man with a yardstick; of another, with a foot ruler, then reporting that the first man measured 2; the second, 6.

Now let's take an example of what can be done with averages. Suppose you're interested in buying stock in a company. You get a report published by the company's management and learn that shares are held by 3,051 people, who hold an average of 491 shares each. That may encourage you to buy—clearly this is a company beyond the control of just a few stockholders.

Yet, the wary investor will ask questions. He may learn that three fourths of all 1,500,000 shares are owned by just three men; the remaining group of 3,048 shareholders actually owns only a fourth of the stock and can easily be outvoted by the three men. But the company report has sidestepped the question of control by reporting holdings on the average.

The report wasn't inaccurate, but it didn't go far enough. This demonstrates how figures can be arranged in order to convey a desired impression.

The index

Another way to compare figures is the index. It is a special percentage which, by taking a single time period as the base, shows the *extent of change* since that time.

Suppose mail orders average $10,000 a week in 1955 and have been boosted to $20,000 a week this year. To find the index of change from 1955, take the current figure, $20,000, divide it by the earlier one, $10,000, and multiply by 100. In this instance, the index is 200. This means that, considering 1955 as the base period and representing its average weekly volume as 100, current business (with an index of 200) is twice as good.

Indexes are important in industry. Many union contracts specify that wages can be changed as the cost-of-living index rises. Supervisors often employ—or are judged by—an index to measure changes in production, accidents, repeat orders, customer complaints.

Yet indexes, like averages, can be manipulated. The trick depends on which year you use as the base period. To make current figures look good, for example, compare them with a poorer time, say a depression year. Conscientious statisticians are alert to such pitfalls and try to establish the authenticity of their figures by telling exactly how they were arrived at. When they use an index, for example, they always state what the base period (which represents 100) was—and they often explain why it was chosen.

Deviations from the average

Careful reports also include the *range* of the sample—the highest and lowest figures—thus indicating deviations from the average. The

stockholders' report mentioned above would have been more complete—and more revealing—if it had noted that the biggest stockholder owned 600,000 shares. Since there were 1.5 million shares out, this deviation would have indicated that there was, indeed, a real possibility of minority control.

The range of the sample is especially important in studies involving large numbers of people or things. By arithmetic calculation, the "average" American family includes 3.6 people, an obvious absurdity. Census figures do indicate that families containing either three or four people are *most numerous*. Though they are a plurality, they still do *not* constitute the majority. Thirty-five per cent of all families are made up of fewer than three people; 20 per cent, more than four —so that 55 per cent of the population (the majority) does not belong to an "average" family. This distinction may not make much difference if, in conversation, you want to refer casually to the average family. But it's momentous if you're planning a housing development.

What to look for

Next time you're confronted with a statistic, then, remember the old saying that you can prove anything with figures. The mere fact that something is stated in print, on television, or across a political platform does not vouch for its authenticity.

Here are a few danger signals:

Look out for bias, whether deliberate or inadvertent. A good way is to ask yourself, "Who says so—and why?" Even if the source is reputable, make sure that whoever quotes it has no axe to grind.

Take a close look at the survey sample. How was it selected—carefully, by a skilled analyst, or merely on the basis of people who chose to return a questionnaire? Is the sample large enough? Ten replies from a 450-person mailing obviously do not represent an adequate cross section of those 450 people.

Consider, too, whether significant information is missing. The sample may be described vaguely, or worse still, not at all. Sometimes percentages are given without the figures used to compile them. (If two of the women in a company that employs only four women are the wives of supervisors or foremen, you could report that 50 per cent of women employees in the company marry the boss.) With indexes, in particular, see that the base year is named—along with the reasons that it was selected.

Be on guard, too, for misleading implications. For example, the fact that more cases of a disease are reported doesn't always mean it's spreading. It's possible that methods of diagnosis are improving, or that health authorities have required that all suspected as well as actual cases be recorded.

Finally, don't let statistics replace common sense. Ask yourself if the

claim adds up. For instance, the number of TV sets in America increased by about 10,000 per cent during the great expansion period from 1947 to 1952. But that didn't mean the same increase rate would continue. If you had extended that growth rate to the succeeding five years, you would have predicted that a couple of billion TV receivers would be in use today—some 40 sets per family.

For the supervisor, the most important statistics are those close to the job. If you're responsible for helping to compile or report figures, be sure to present them with the same accuracy you demand from others. If you're on the receiving end, however, stand up and ask questions about data that seem vague, misleading, or without basis in fact. Look, then, for the origin of all statistics—and don't accept anything that looks like a suspicious piece of workmanship. ♦

Fashion Show—Moscow Style

DESPITE THE FREQUENT GRIPES about the high cost of living in the United States, the American worker has nothing to complain about compared with his Russian counterpart. Richard Josephs reports in *Apparel Arts* magazine that the Soviet citizen works for two months to earn enough money to buy an overcoat. It takes five weeks on the job to pay for a suit, and, for a decent pair of shoes, more than two weeks.

Take this example: An overcoat in a Leningrad store window is listed at 2,105 rubles. At the official exchange rate of four rubles to the dollar (the actual value of the ruble is far less), that's $526. Since the average wage of a skilled worker in the Soviet Union is about 1,000 rubles a month, it takes him two months' work to buy that coat. If his American counterpart, who makes more than $400 a month, had to work that long to buy the coat, it would cost him more than $800—ten times the cost of a similar coat here!

At four rubles to the dollar, the Russian worker pays these prices for his clothes:

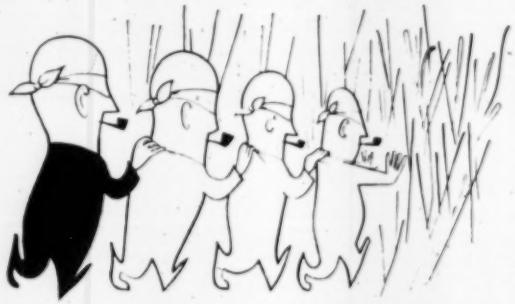
Very good suit, $525
Average suit, $300
Very cheap summer suit, good for about one season, $100
Good shirt, $30
Cheapest shirt, inferior to anything manufactured here, $13
Good neckties, $8.50
Pajamas, $28
Good sports shoes, rubber soles and heels, $100
Cheap shoes, worth less than $10 in U.S., $75

TEN WAYS TO PETRIFY PROGRESS

MANAGERS OF AMERICA, AWAKE! All around you the status quo is in deadly peril. In laboratories, factories, and offices, wild-eyed innovators are busy turning out a steady stream of dangerous new ideas. Under cover of cutting costs and building profits, they are stealthily undermining the established order, The Way Things Have Always Been Done.

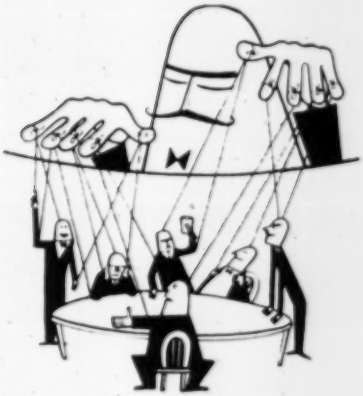
True, you can't stop progress—but in your own department you can slow it down to a barely perceptible crawl. The strategy is clear: Stop new ideas before they start. Applied ruthlessly, the tactics outlined below will enable you to stamp out the insidious contagion of creativity.

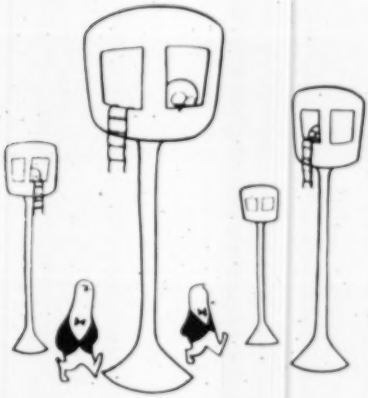
Swing into action, managers, before your most cherished assumptions and time-honored routines go the way of the pterodactyl and the dinosaur!



Follow accepted practices. Has the proposed approach ever been tried before in your company? If not, it can't be much good. Better stick to the tried and true: Follow the lead of your colleagues (even if they're heading straight for oblivion).

Make all the decisions—nobody else knows how. You may, however, put your subordinates through the motions of a democratic discussion. After a few practice sessions they will get the point, and you may then rely on them not to voice a single unwanted or unexpected idea.





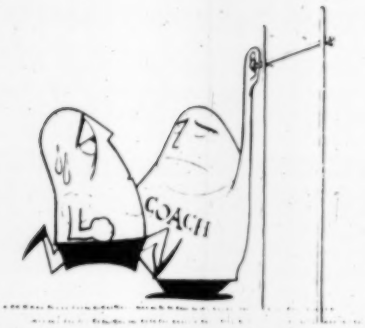
Keep your job to yourself. Don't discuss your job; don't tolerate questions; above all, don't divulge your problems. It's true that others might be able to help you, but can you trust their motives? No, far better to struggle on in isolation. Your tower may not be pure ivory, but at least it's your own.

Shoot first—ask questions later. Catch new ideas when they're in the vulnerable embryonic stage. A swift, snappy objection will bring the idea to a standstill. You can then pick it up, examine it closely, and remove the vital spark.

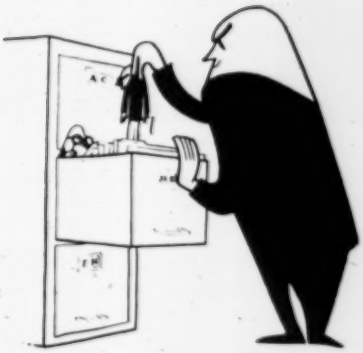
Hire an expert to do your thinking. Nobody can really be trusted with a problem except a man who has made a lifetime study of the subject and knows exactly what *not* to do. And what could your other employees offer—aside from common sense, insight, and experience in your business? Another advantage of having one man do all your thinking is that you can easily fire him if he starts getting too original.

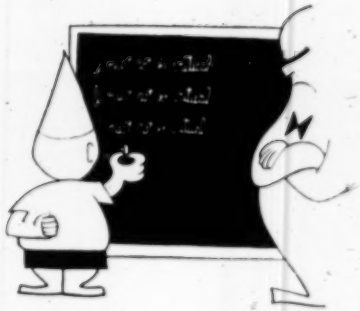
Point out the flaws. So your assistant's plan for simplifying the subassembly will speed production and enable the company to fill $15,000,000 worth of back orders? Maybe so. But if he's so hot, why didn't he think of it a year ago?

Set standards impossibly high. A plan to cut costs 3 per cent? Too piffling even for discussion. The only plan you will entertain is one that will eliminate costs altogether.



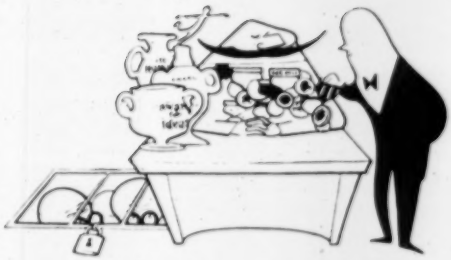
Keep subordinates in their places. A job for everybody, and everybody hard at his job. Keep them in tight compartments and their ideas—if any—will die for lack of air.





Permit no criticism. It's bald-faced treachery to question so much as a single routine established by the old-timers—who have long since gone to their reward. (If they were still around, *they'd* be making changes—but that, of course, is a different matter.)

Snatch all the credit. Despite your severest squelching, some insensitive people may continue to come up with new ideas. In these extreme cases, your best policy is to accept the ideas, but proclaim them as your own. The chances are you won't be bothered again—at least, not by the same person.



• *Text by* LYDIA STRONG
• *Drawings by* AL HORMEL

THE ART OF SKIMMING

By Nila Banton Smith

Director of The Reading Institute
and Professor of Education, New York University

SOME PEOPLE can cover 1,000 words a minute and still repeat the gist of what they have read. These people have mastered the art of skimming.

There is no greater asset to the reader than this highly developed skill. The man who knows how to skim can read books, newspapers, and magazines selectively and quickly. He can also clear stacks of papers from his desk. For skimming enables a person to select quickly material he wants to read, and discard what he does not want to read.

Rarely does the person who is skillful in skimming complain that he doesn't have time to cope with the mass of reading material that confronts him.

Using skills you have learned

While skimming is the most useful of the reading skills, it is also the most complex; it takes practice. The skills you have learned through-

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out the course will serve as a foundation for this new skill.

A strong, leading-on purpose is essential, for you must know what you are skimming for.

You must also force your speed, even beyond your fastest rate for easy material. In skimming you fly over the pages, but you must learn how to get what you want from them as you go along.

Recognizing the signposts, finding main ideas, previewing, looking for and remembering clusters of related details are all techniques you call into action as you skim for different purposes. Knowing how to preview, for example, will often serve as the first step. In a book, flash your eyes over the table of contents to get an over-all view of the material the book contains and decide whether you would be interested in the book as a whole or just in certain chapters. One good way to use your preview technique effectively is to convert any subheads you find into questions, and then skim to find the answers to these questions.

New skills

Developing a new attitude toward reading is a prime requisite in learning to skim at a high speed. This new attitude is a combination of willingness to pass quickly over a page without reading everything it has to say, and release from a feeling of guilt because you haven't read it thoroughly. For people whose work requires meticulous reading—like supervisors who must read technical manuals—considerable effort and will power is necessary to break loose and cover quantities of material without reading every word.

Much reading *must* be done meticulously, of course, but a great deal of it could be skimmed.

The first new technique to learn is skimming for *main ideas only*, ignoring everything but the main idea in each paragraph. This will be your first experience at skipping over large sections of content, without restraint.

Another new technique is to use *key words only*, that convey the general meaning of a selection. Developing skill to read only these words, omitting all less-important words, greatly facilitates skimming.

And you should use a new pattern of eye movements—a pattern in which you sweep your eyes *from the top to the bottom* of pages. By this time, you have probably developed excellent speed in reading horizontally. The next step is to develop skill in making fleeting eye sweeps vertically. The old habit of reading from left to right has been ingrained in your nervous system since childhood, and it will take practice to develop vertical eye movements.

Related to this technique is one

This is the eighth and final article in a series on reading improvement, serialized with permission of Prentice-Hall, Inc., from a book by Dr. Nila B. Smith, to be published this year.

more skill essential to skimming. Ordinarily, we use our *lateral* field of vision. We fixate at a point on a line and read all the words we can see at the left and right of it. Then we move on to another fixation and repeat the process. But it is possible also to cultivate our *vertical* field of vision—to take in words above and below the point of fixation. Undoubtedly phenomenal skimmers who claim they can grasp 3,000 or 4,000 words a minute use their vertical field of vision.

In working with the following selections, resign yourself to passing over large portions of text with no attempt to find out what they say.

Also make a conscious effort to speed up your vertical eye movements. Try sweeping your eyes down through the print on any one page and up to the top of the next just as fast as you can.

Skimming for Main Ideas

In the following selection skim for main ideas only and omit everything else.

1. Preview the title.
2. Formulate your purpose for reading the article. For practice purposes, let's agree that you want to read to find the answer to the question, "What was the hoax?"
3. Grasp the main idea in each paragraph as quickly as you can, then sweep your eyes with high speed straight to the next paragraph, grasp the main idea in that paragraph, and so on. Pay no attention to anything but main ideas.
4. Allow yourself a total of one minute. Stop at the end of one minute whether or not you have finished.
5. Take the comprehension test based upon main ideas only.

SELECTION 1: The Famous Fossil Hoax [1]

The hoax of the Wurzburg fossils, a far-reaching piece of foolery perpetrated 200 years ago by German university students, ranks in ingenuity with the "Balloon Hoax," the New York *Sun* "Moon Hoax," and other celebrated practical jokes of history.

The butt of the fossil joke was a serious-minded old professor, Johann Beringer, who held an honorable position as a Doctor of Philosophy and Medicine at Wurzburg University. The doctor, highly respected for his learning and studious habits, was appointed private physician to the reigning Prince Bishop of the old university town. He was distinguished as a scholar and writer in the fields of zoology, botany, and medicine.

Of all the problems then engaging scientific minds, none had caused more contention than the origin and meaning of fossils. It was claimed by some that the creation of fossils was due to

[1] Leon Augustus Hausman, *The Mentor*, February, 1922, pp. 40-42.

an unknown influence of the stars. Another theory explained fossils as the remains of oceanic animals and plants stranded on the land by the Flood. It was not until about 1800 that it was determined that fossils were relics of animal and vegetable life that existed in prehistoric times and had become entombed in rock, in frozen mud, in the beds of rivers, even in the soft gum of cone-bearing trees.

The science of paleontology, or the knowledge of fossils, attracted Professor Beringer. He advanced an original theory that fossils were merely a capricious fabrication of the Creator, placed in the earth to test human faith. He was so keen about this pet notion that some of his pupils at the university could not forbear playing a trick on the old professor.

With the connivance of some of his own colleagues, the students prankishly fashioned "fossils" out of clay and hid them among the rocks of a hillside where they knew Beringer used to roam around on geological exploration. It was not long before the venerable professor chanced upon the fictitious deposits during one of his walks. Completely deceived, overjoyed at his discovery, Beringer hurried back to the university and exhibited the organisms he had found.

The jokers, perceiving with glee the success of their jest, now went further and buried the most fantastic figures their imaginations could suggest. Not content with these, they even buried inscriptions, worked out on "fossil" shells, one of them being the name of God Himself, in Hebrew!

Professor Beringer's elation upon the discovery of these forms knew no bounds. He was now completely convinced of the soundness of his doctrine, and made ready to publish the results.

The semireligious fervor of the honest old scholar swept all before it. Despite the advice of level-headed friends, he hurried his ponderous work to completion.

And now for the strangest part of the story. The jesters came forward and confessed. They exposed all they had done. To their confusion, Beringer refused to listen. The hoaxers reiterated their statements that the whole thing was a colossal joke. Beringer could not be convinced. He conceived this as a base trick of his adversaries. He suspected them of trying to rob him of the glory of proclaiming his discoveries and establishing the truth of his theory. He hurried into print. His magnum opus appeared!

The entry of the volume into the world of learned literature was heralded by a shout of laughter! The author's name became a byword in the universities of Europe. Some declared his book was only an attempt to fool the scientific world, others set it down as the product of a mind diseased.

Copies of the weighty volume, printed in Latin, bore the title *The Figured Stones of Wurzburg*, and were illustrated with "marvelous likenesses of the hundred figures, or rather, insectiform stones." It was published in Wurzburg in 1726. The pompous dedication, nine pages long, is to Christopher Francis, Prince Bishop of Wurzburg. After the dedication and the preface comes the body of the work, descriptive of Beringer's discovery of the fossils, the manner of

their exhumation and examination, the account of the attempt of his colleagues to dissuade him from the work, and the description and significance of the "fossils" themselves.

For a time there was question in some parts of the scholastic world whether or not Beringer's book was of value, a situation that spurred the deceived scientist to greater efforts in his own defense.

But, as the truth became generally established, Beringer himself was finally undeceived. The blow staggered him; he was overwhelmed.

From the pinnacle of learned dictatorship, which he had formerly occupied so securely, he beheld himself tumbled headlong, almost in a night.

In a frenzy he attempted to buy up all copies of his book that had been issued. His most assiduous efforts were futile, however. Finally he surrendered to despair. His life's work was treasured and exhibited by many as an object of ridicule.

The broken-hearted scientist fell ill under the strain and died shortly afterward, with the laughter of the scientific world ringing in his ears.

Even after Beringer's death there was no end to the tragic joke. A bookseller, one Hobhard of Hamburg, seeing an opportunity to make capital out of Beringer's misfortunes, bought up all available copies and not only reissued them, but compiled a second edition which achieved a large circulation.

Check Your Comprehension

1. The hoax of Wurzburg (a) boomeranged on the perpetrators instead of hitting its mark, (b) ranks with the greatest practical jokes of history, (c) brought eventual fortune to the man at whom the joke was aimed, (d) was really not a hoax in the true sense of the word. ____
2. The butt of the joke was (a) a university student, (b) a professor, (c) an astronomer, (d) a minister. ____
3. The science of paleontology is concerned with (a) bacteria, (b) the planets, (c) medicine, (d) fossils. ____
4. The jokers fashioned their fossils out of (a) soap, (b) wax, (c) clay, (d) wood. ____
5. The hoax was perpetrated by (a) Beringer's colleagues, (b) students with the connivance of his colleagues, (c) students without the knowledge of his colleagues, (d) none of the foregoing. ____
6. The jokers (a) placed their most fantastic figures on the professor's desk, (b) placed them on a stairway leading to his classroom, (c) buried them in a place where Beringer would discover them, (d) placed them in a glass case containing fossils. ____
7. When Beringer discovered the fossils he (a) was delighted, (b) ignored them, (c) returned them to the person he considered the rightful owner, (d) recognized them as fakes. ____
8. When Beringer was informed about the hoax, he (a) refused to

believe it at first, (b) withdrew from the university staff, (c) wrote a public confession and apology, (d) went into seclusion. ____

9. After finding the fake fossils, Beringer (a) punished the jokers, (b) gave lectures on the discovery, (c) published a book, (d) sent articles to a newspaper. ____

10. In the end Beringer (a) convinced others that he was right, (b) received recognition from other scientists, (c) died from the strain that accompanied his discovery of the truth about the fossils, (d) tried to capitalize financially on the sale of his books. ____

See the Answer Key, page 70. Allow 10 points for each correct answer.

Comprehension Score: ____

Skimming for Details

In the next selection you will use a technique for grasping detailed facts about *one* item under a title, ignoring everything else in the article. Use your vertical eye movements to skim the pages from top to bottom until you find the paragraph or paragraphs that deal with the details in which you are interested. Then use the techniques you have learned for grasping details. To remember them, use your memory techniques.

Suppose you come across this informative article, "Stalking a Hurricane." You don't care about hurricanes in general, but you are interested in the phenomenon called "the eye of the hurricane," and you want some specific details about it. With this purpose in mind:

1. Skim through the article, using vertical eye movements at your highest speed, until you come upon mention of the "eye of the hurricane." Don't try to read any of the text until you find this section. And don't worry about skipping several paragraphs without knowing what they say.

2. When you find "the eye," slow down, reading and absorbing each detail about the eye of the hurricane and fitting each detail into a pattern of relationships to the main idea and to one another. Do this as fast as you can, grasping all details.

3. Allow yourself no more than one minute for this exercise. If you can do it in less time, so much the better.

4. After you have read for the specified length of time, take the comprehension test which, in this case, is concerned *only* with the eye of a hurricane.

SELECTION 2: Stalking a Hurricane[2]

Why are there fewer deaths and less property damage from hurricanes? Are the "big winds" getting weaker? Or fewer in number?

Not at all. The hurricane remains one of the most powerful forces on earth. During the 1952 hurricane season, six of these colossal whirlwinds roared through the American tropics with momentum enough to carry

[2]John E. Long, *Science Digest*, September, 1953, reprinted from *Nature* (August, 1953).

several of them on into northern areas as the worst storms of the year. But property damage set no records, and no deaths could be attributed directly to any of them.

Yet in 1928 a Florida hurricane took 7,800 lives. At Galveston, Texas, in 1900, a hurricane killed more than 6,000; and as late as 1948 casualties from the big winds were still numbered in scores.

The explanation of reduced casualties and smaller property damage in recent years is, in three words, *better advance warning*. . . .

During the progress of a major hurricane, the Miami Hurricane-Warning Center, for example, issues four "advisories"—weather versions of a wartime communiqué—daily, based on reports received during the previous six hours. . . .

In the meantime, a search plane has made contact with the enemy. Far ahead through the rain squalls the pilot sees a dark, ominous-looking mass of whirling clouds, mist, and water that seems to reach up into the heavens and stretches fully 30 miles from side to side. . . .

Because a hurricane's safest point of entry is usually its westward side, the plane approaches from the west. And from now on, every 15 minutes information obtained from meteorological instruments and by radar will be radioed to Miami. . . .

After nearly an hour of sampling the air on the fringes of the hurricane, the pilot heads directly into it. The heavy, four-engined ship pitches and yaws, dives and soars again, until its creaking frame seems to be tearing apart. . . .

An interminable quarter hour of this—and suddenly the plane breaks through the storm into the clear. All pitching and tossing ceases, the howling gale quiets as if a valve had shut it off, and bright sunshine pours through the drenched windshield. Down below, the sea shows a few whitecaps, but the whole aspect is one of peace and calm. The transition is so sudden and unexpected that it comes as a shock, even to crews who have experienced it many times.

This strange world, called "the eye of the hurricane," is one of the weirdest, most awesome sights on earth. Its boundary is a vertical curtain of black, reaching from the ocean far up to the open sky above. It is difficult to believe that beyond this ebony cylinder, now 10 to 15 miles in diameter, is a watery chaos, revolving furiously in a counterclockwise direction as it is driven by gales of 180-200 mph.

Strange things have been observed by planes cruising "the eye." Flocks of birds sometimes take refuge there, moving along within the comparative safety of the storm's vortex, which may have a forward motion of only 10 to 15 mph. Ships sometimes seek the eye to ride out the worst of the storm's violence before resuming their course. One plane observed a fishing boat, with the crew on deck sunbathing, within a hurricane's eye.

As the hurricane-stalking plane crashes around the eye, the "dropsonde" operator goes into action. As the dropsonde, an instrument dropped from the plane by parachute, slowly descends, it automatically records atmospheric pressure, temperature, and humidity of the air, and relays these to the plane by a radio transmitter.

But now the fuel is getting low, so the pilot plunges back into the black wall of the hurricane, choosing the western or "weak" side, where, experience has taught him, a hearty tailwind can be picked up. Fifteen minutes more of furious buffeting, and the tired crew heads for the barn, clipping through squalls that would be bypassed by ordinary pilots.

Check Your Comprehension

Follow the usual procedure in working with the statements below.

1. The adjectives used to describe "the eye" in the article are (a) black, very dangerous, (b) windy, strange, treacherous, (c) weirdest, most awesome, (d) powerful, terrifying. ____
2. The shape of the eye is (a) square, (b) cylindrical, (c) elliptical, (d) conical. ____
3. The eye is bounded by (a) a black circular band, (b) horizontal black bands, (c) heavy orange lines, (d) a vertical curtain of black. ____
4. The diameter of the eye is (a) approximately 1 mile, (b) approximately 5 miles, (c) approximately 6 miles, (d) 10 to 15 miles. ____
5. The hurricane is driven by gales of (a) 180-200 mph, (b) 40-60 mph, (c) 400-500 mph, (d) 10-20 mph. ____
6. The eye is (a) furiously active, (b) drenched with rains, (c) calm enough so that birds or ships can take refuge in it, (d) cold and snowy. ____
7. The eye (a) has no motion, (b) moves around in circles, (c) moves forward at about 100 mph, (d) may move forward with a motion of only 10-15 mph. ____
8. The first thing the search plane does upon discovering the eye is to (a) fly through it and report its location, (b) fly into it and stay there, (c) avoid it, (d) cruise around it and put the dropsonde into action. ____
9. The functions of the dropsonde are to (a) record the direction and velocity of the wind, (b) record the diameter and height of the eye, (c) record the atmospheric pressure, temperature, and humidity, (d) record the size of the area the hurricane is covering. ____
10. When fuel gets low the search plane leaves the eye on the western side because (a) the plane is facing the sun, (b) the hurricane is strongest in the west, (c) the eye is in the western part of the hurricane, (d) experience has taught the pilot a hearty tailwind can be picked up there. ____

See page 70 for answers. Score 10 points for each correct answer.

*Comprehension Score:*____

Grasping Key Words

Grasping key words is another shortcut to rapid skimming for general comprehension. Usually the important ideas are carried largely through nouns, verbs, adverbs, and adjectives. With practice, you can mentally supply less-important words without stopping to read each one.

Examples of "less-important" words are the articles (*the, an,* and *a*); *pronouns* (such as *you, your, it, they*); prepositions (such as *in, of, with to*); and many other words that are not essential in putting across the import of a sentence.

In the following paragraph, the less-important words have been omitted. Skim through the key words rapidly. You will find that you have little trouble following the trend of what the author is saying.

My Neighbor the Hippo[3]

____mud hut____ ____I lived____five years____British East Africa____situated____two miles____Lake Elmenteita. ____remote stretch____water remains____ ____ ____undisturbed____white men. Except____ ____ ____naked savage____spear____club, no human being troubles____lives____ ____ ____waterfowl____scarlet flamingoes. I used____wander____ ____ ____shores because ____knew____ ____depths____inhabited____hippopotami. ____certain seasons____sunrise____sunset____air would resound____ ____ ____ ____bellows.

Now, in your own reading, take the more advanced step of ignoring the less-important words as you skim through, grasping key words only.

Using Your Vertical Field of Vision

Now you will be introduced to the highest skill in skimming—using your vertical field of vision. This skill enables you to see two or three words, figures, or phrases above and below the point where your eyes are fixed without moving your eyes up or down. You simply hold your eyes in one place and take in everything within your range of vision, *vertically*.

First try to see three sets of figures in a vertical column at one glance.

In this vertical column look squarely at the middle figures, and read all three figures *without moving your eyes.*

12:15
12:30
12:45

Now practice this skill on the radio schedule in your newspaper. This will require using vertical eye movements and vertical field of vision.

[3]Llewellyn Howys, *The Mentor,* June 1922, pp. 30-31.

But you will also have to switch to horizontal eye movements, and to your horizontal field of vision.

Suppose you want to find a particular program—say, a news program at around noon. You turn to the radio column of your daily paper. Now, what is the quickest way to find the program?

1. First preview to find the heading that tells you which section is devoted to *daytime programs*.

2. Using the fewest possible vertical eye movements, glance down the columns until you find the time you want.

3. Next glance quickly at the words to the right of the time in search of the one word, *news*.

4. Then with one quick backward fixation, grasp the call letters of the station. All this should take about one second.

EXERCISE 1

The following table gives statistics for the amount of estimated retail sales in different businesses for September and October, 1956 and 1957.

Use your vertical field of vision in skimming to find certain types of business and compare their sales figures.

Fixate in the middle of the first group of names, then in the middle of

Retail Trade[1]

Estimated sales, seasonally adjusted, in millions of dollars

Types of Stores	1956		1957	
	Sept.	Oct.	Sept.	Oct.
Automotive Group	2,780	3,035	3,190	3,180
Motor-vehicle, other automotive dealers	2,599	2,862	2,995	3,002
Tire, battery, accessory dealers	180	173	194	178
Furniture and Appliance Group	908	864	902	838
Furniture, house-furnishings stores	558	530	574	520
Household-appliance, radio stores	350	334	327	318
Lumber, Building, Hardware Group	960	918	918	905
Lumber, building-materials dealers	711	689	691	691
Hardware stores	249	228	227	215
Apparel Group	977	982	1,050	1,029
Men's and boys' wear stores	209	214	215	216
Women's apparel, accessory stores	392	388	430	415
Family and other apparel stores	210	208	232	228
Shoe stores	166	172	173	170
General-Merchandise Group	1,773	1,674	1,803	1,706
Department stores, excl. mail-order	989	913	not available	
Mail-order (catalogue sales)	116	112	121	124
Variety stores	295	292	302	293
Other general-merchandise stores	374	357	not available	

[1]Excerpted from *Survey of Current Business*, U. S. Dept. of Commerce, Nov. and Dec. 1957

the second group, and so on, until you find the business you are looking for. You don't have to read all the names in any one group. Look at a point in the middle of the group and, holding your eyes right there, gather a reading impression of the phrases above and below the point at which your eyes are fixated.

Now, see how quickly you can find the name of each of the following businesses by making just one fixation in the middle of a group of names and using your *vertical* field of vision: women's apparel, accessory stores, lumber, building-materials dealers, mail-order (catalogue sales).

Did you discover that you could find these names readily with the use of your "above" and "below" field of vision, without moving your eyes from the middle point where they were fixated?

In scanning this table, you will also have to use your horizontal field of vision. After you find the name of the business in which you are interested, you will want to read the numbers at the right that give comparative figures for 1956 and 1957. Make just one fixation for each of the pairs of figures. This fixation should be in the column of vacant space midway between the two groups of figures, so that you can take in both groups at once with your horizontal field of vision. You must make the switch from the vertical to the horizontal with great speed.

See how quickly and accurately you can complete your scanning for the items needed to fill in the blanks below. After each hasty scanning write the correct numbers in the blank spaces.

Kind of Business	Sales			
	1956		1957	
	Sept.	Oct.	Sept.	Oct.
Hardware stores	____	____	____	____
Household-appliance, radio stores	____	____	____	____
Mail-order (catalogue sales)	____	____	____	____
Shoe stores	____	____	____	____

Check your answers with the table.

Now that you have had some experience in using your vertical field of vision in skimming groups of numbers and words, try using it in a selection consisting of sentences and paragraphs.

Increasing numbers of magazines are using double columns these days. This practice facilitates skimming with vertical eye movements and the vertical field of vision. Often it is possible to sweep the eyes straight down through the middle of a narrow column, taking in the center of two lines at a time. In the great majority of cases, the central section of the lines contains enough words to convey the information in the selection, even though you do not see the words at the sides. If you find that you aren't following the thought at a certain point, you can always glance quickly to

the left or right to catch a key word that will complete this meaning. Even if you do have to take a side excursion now and then, you can still cover the selection much more rapidly this way than by reading horizontally, line by line.

1. In the selection below, sweep your eyes straight down through the middle of the column.
2. Gather all the important details you can by reading the center of two lines at one fixation.
3. If you lose the thought at any point, catch a key word with a fleeting left or right glance.
4. Allow yourself exactly five seconds to skim the article in this way.
5. Take the comprehension test after you have finished skimming the selection.

SELECTION 3: Facts About Hamsters

Hamsters have been increasing in favor as laboratory animals. They're also kept as pets.

Hamsters can be bought from the same sources as white mice. Price is $2.50-$3.00 a pair. Keep your hamsters in a room with a temperature between 55° and 70° F. Keep them in metal cages, or in wooden cages protected on the inside with hardware cloth, to keep them from gnawing their way out. A cage 12 x 15 x 12 inches will house a pair, while a cage 35 x 25 x 15 inches will take care of eight to ten animals. An adult hamster needs about 10-15 grams of food per day (⅓-½ ounce).

You can breed your animals throughout the year, but most litters are produced between November and May. A female will produce only five or six litters in her lifetime. The gestation period is about sixteen days. The number of young per litter averages about seven.

Hospitals, laboratories, biological-supply houses, schools, and certain other institutions offer the best market for the sale of hamsters. You should assure yourself of such a market before you raise many hamsters to be sold.

Check Your Comprehension

Write "True" or "False" to the left of each statement.

_____1. Hamsters are decreasing in favor.
_____2. They are bought from the same sources as white mice.
_____3. The price of a pair of hamsters is from $5.00-$10.00.
_____4. They may be kept in a metal cage protected with hardware cloth.
_____5. One pair should have a cage 40 x 20 x 40.
_____6. A hamster needs 10-15 grams of food per day.
_____7. They may produce litters in November and December.
_____8. The female produces 10-15 litters in a lifetime.
_____9. The gestation period is ten days.
_____10. You might be able to sell some hamsters to laboratories.

Check your answers with the selection to find how well your vertical field of vision worked for you.

Now try your vertical eye movements and your vertical field of vision on page-width material of your own selection. Simply adapt the skills you have learned to wider lines.

1. In the following article on "Tipping," skim to find the answer to the author's question in the subtitle, "A National Racket?"

2. To answer the question, you will, on the whole, skim only for general ideas, but you will also have to grasp and remember some of the details expressed in figures. So you will use a combination of techniques in skimming this article: general skimming, and grasping and remembering details.

3. Allow yourself ten seconds to skim, then take the comprehension test.

SELECTION 4: Tipping[5]

A National Racket?

We Americans hand out approximately $750,000,000 annually in tips, according to the U. S. Department of Commerce. Of this amount about $450,000 goes to restaurant employees. The rest goes to hotel bellboys, taxi drivers, beauticians, barbers, parking-lot attendants, bartenders, and a host of others who expect gratuities from the public for their services.

In spite of these figures, however, tipping is generally an unpopular and disliked custom in the United States, and it always has been. As far back as 1896, the secretary of the Journeymen Barbers International Union of America condemned tipping as "humiliating and degrading." In 1905 the Anti-Tipping Society of America had 100,000 members, the majority of them salesmen. Within the next few years anti-tipping laws were passed in Arkansas, Iowa, Mississippi, South Carolina, Tennessee, and Washington. This legislation was short lived, however, for in 1919, the Iowa law was repealed as unconstitutional and the other states soon followed suit.

Today, of course, we're all aware of how widespread the practice of tipping is, and how many categories of workers it covers. It has become mainly a "pressure" custom. And while we go along with it outwardly, the majority of us actually feel that it is wrong in principle. According to a recent survey on the subject, 65.1 per cent of the people queried definitely disapprove of tipping, only 22.2 per cent approve, 12 per cent are undecided.

A laborer should be worthy of his hire, no matter what his field. He shouldn't have to depend on the gratuities of the public. Yet the U. S. Chamber of Commerce reports that 1,800,000 people depend on tips for the major part of their income.

Tipping itself has a servile aspect. One does not tip an equal. Even the way tipping is usually handled is undignified. The coin is slipped under the edge of the plate, out of sight, or

[5]Oneta Aldrich Wakeford, *American Mercury*, June, 1954, pp. 127-129.

into the recipient's hand quickly, almost stealthily, as if the transaction weren't quite aboveboard. In the words of Edward Corsi, who conducted hearings on proposed minimum-wage laws for New York restaurant workers: "Tipping is unworthy of labor in the twentieth century. It makes a servant out of the worker. It is disgraceful that the worker has to depend on tips for a living."

This dependence on tips puts the worker in an unfair position. He has grown to expect them as his earnings, and not as a token of appreciation for extra service he has given. . . . There are headwaiters who, working in expensive nightclubs that dot the country from east to west, report yearly incomes of $35,000. At least six in New York earn $50,000. These, naturally, are the exception.

The customer, on the other hand, is placed in an uncomfortable position, as well as what he thinks is an unfair one. The uncomfortable feeling comes usually from not knowing exactly how much he should tip. Practically everyone over fifteen has read the etiquette "rules" of how much to tip and when. But if these rules were printed four or five years ago, he can be sure that they're substandard for today's tipping. For instance, 10 per cent of the restaurant check was a standard tip a few years back. Today, it is 15 per cent or more. . . .

Because there are so many variations to the rules, a customer is often in a quandary to know whether the "rule" holds good in his particular situation. Take the case of a woman going into a beauty shop. She is armed with the "social knowledge" that she'll be expected to tip the operator 15 per cent of her total bill. However, by the time she's had a haircut, shampoo, set, and manicure, not one operator, but four, have waited on her. If, for instance, her bill is $6.00, won't the required 90-cent tip, divided four ways, look stingy?

The term "tip" originated in a London coffeehouse in Fleet Street where Samuel Johnson and his cronies frequently visited during the eighteenth century. On the table was a bowl with the words, "To Insure Promptitude," printed around it. The phrase was later shortened to "Tip."

Today, a person is expected to leave a tip even though the service has been slow and indifferent. The unfairness of the tipping racket, as far as the customer is concerned, hinges on the feeling that he is being pressured into carrying part of the employer's burden. If he pays a good price for his haircut, why should he tip the barber? Isn't it up to the employer to provide a decent wage for the people who work for him? . . .

It seems to the customer that tipping is the employers' way out of responsibility. They pass the buck of their workers' salaries on to the customer.

Most of us continue to tip, even though we dislike the practice, for one or all of these reasons: (1) Conscience. We recognize the injustice of the worker's meager wage and feel that we must add to his take-home pay. (2) Social pressure. We don't wish to look like cheapskates to our associates or to the workers themselves. (3) Moral weakness. We lack the courage of our convictions that the principle of tipping, as it is being used today, is inherently wrong.

In some foreign countries such as Finland, a service charge is added to restaurant and hotel bills. I believe most of us would prefer this system to our present one.

The tipping racket can be stopped only when the three groups—employers, workers, and customers—decide that it is archaic and unfair and proceed to do something about it.

Check Your Comprehension

1. The United States hands out in tips each year (a) millions of dollars, (b) hundreds of dollars, (c) thousands of dollars, (d) a very small amount. ____
2. In the United States tipping is (a) generally approved, (b) generally disliked, (c) viewed with indifference, (d) regarded as unconstitutional. ____
3. Anti-tipping laws in the United States have been (a) short lived, (b) suggested but never passed, (c) successful where they have been tried, (d) successful in only a few cases. ____
4. Tipping places the worker in the class of (a) a laborer, (b) a servant, (c) one's equal, (d) one who deserves recognition. ____
5. In following the rules for tipping, a customer may (a) teach the rules to the person who serves him, (b) always tip exactly the right amount, (c) disregard the rules entirely, (d) be disturbed because of variations in rules. ____
6. As the years go by the amount given for tips (a) has become standardized, (b) is generally less than previously, (c) is generally higher than previously, (d) is higher for some services and less for others. ____
7. The word "tip" originated in (a) a French restaurant, (b) a Norwegian smorgasbord, (c) a London coffeehouse, (d) an American hotel. ____
8. Nowadays you are supposed to leave a tip (a) only when the service is as good as usual, (b) only when you ask for something special, (c) only when the person serving you is unusually attentive, (d) even though the service has been slow and indifferent. ____
9. It seems that tipping is a good way for an employer to (a) recognize his help, (b) avoid his responsibility, (c) aid his help to avoid income tax, (d) find out which of his employees have special abilities. ____
10. In Finland tips are (a) regulated, (b) not emphasized, (c) added to the bill, (d) paid by the employer. ____

See the Answer Key on page 70. Allow a score of 10 for each correct answer.

*Comprehension Score:*____

Vocabulary Study

The italicized words appeared in the selections you have just read. Check the phrase (*a, b,* or *c*) that correctly completes the sentence.

See page 70 for answers. Score 20 points for each correct answer.

1. A *capricious* person would
   a) do surprising things
   b) usually be angry
   c) be a good soldier
2. He *reiterated* the
   a) machine
   b) building
   c) statement
3. An *assiduous* worker would
   a) work with chemicals
   b) work hard
   c) work sitting down
4. The *exhumation* was done by
   a) a physician
   b) a smoker
   c) a gravedigger
5. The boat slowly approached the *vortex*

a) to dock, b) to take it on board, c) because it was drawn to it

*Vocabulary Score:*____

Follow-up Suggestions

You have now tried skimming for main ideas, skimming with the use of key words, skimming with the use of vertical eye movements and your vertical field of vision. Continue with your daily practice periods and devote part of your time to practice in skimming. Skim to find an article you want to read. Skim to find a fact or figure. In a factual article skim to get main ideas. In easy narrative material skim to follow the trend of thought. Set a time limit of one minute and see how much you can get out of an article in that time.

Also try skimming quantities of the material you meet in your daily work or recreational activities. Use various combinations of the techniques you have learned, for these changing combinations will help you to accomplish your different purposes. As you become more and more expert, try the flashing-from-top-to-bottom-of-the-page technique more frequently. With practice you can become skillful in gathering meanings with one vertical sweep of your eyes right down through the middle of the column or page. When you can do this effectively, you will know that you are an expert skimmer.

Now that you have learned the basic skills of reading better and faster, you can apply them to your everyday reading. You'll find yourself learning more of the things you want to know, with less effort and more enjoyment. ◆

DID YOU KNOW . . .

Office Hours: A 40-hour week is still the rule in most offices, according to a survey conducted by the Industrial Publishing Corporation. More than 61 per cent of all office employees work 40 hours, and only 6.6 per cent put in fewer than 36 hours a week. Other findings: 50.5 per cent of the companies allow lost time to be made up by working late or on Saturdays; only 25.3 per cent dock employees for tardiness; an hour for lunch is most common, although more than a quarter of the companies allow only half an hour.

Coffee-Break Compensation: Since the coffee break is an integral part of the workday, injuries occurring during the break are subject to workmen's compensation, according to a decision of the Wisconsin Supreme Court. The court ruled that a carpenter injured while being driven to a luncheonette during a coffee break was entitled to compensation, since he was hurt in the line of work. Said Supreme Court Justice George Currie, ". . . the fact that the plaintiff was not actually wielding a hammer or a saw . . . is wholly immaterial."

Price of Pilfering: Investigations, Inc. warns that employee thefts in the U.S. will probably total $1 billion this year. That means that $4 million in cash, merchandise, and materials is pilfered every workday. The Illinois Retail Merchants Association places much of the blame for internal crime on mismanagement, which can lead to bickering, griping, poor morale, and eventual dishonesty.

Marriage and Money: Matrimony seems to have a favorable effect on the earning power of American men. Married workers earn an average 30 per cent more than unmarried ones, says the U.S. Bureau of the Census. With women, however, it's different. Single women usually earn slightly more than their married counterparts.

Report from Britain: The average weekly pay for an adult male worker in British industry is twelve pounds, one shilling, and sixpence—$33.81. For this, the highest average pay on record, he works an average of 48½ hours a week.

SM's Roundup of Recent Research Findings

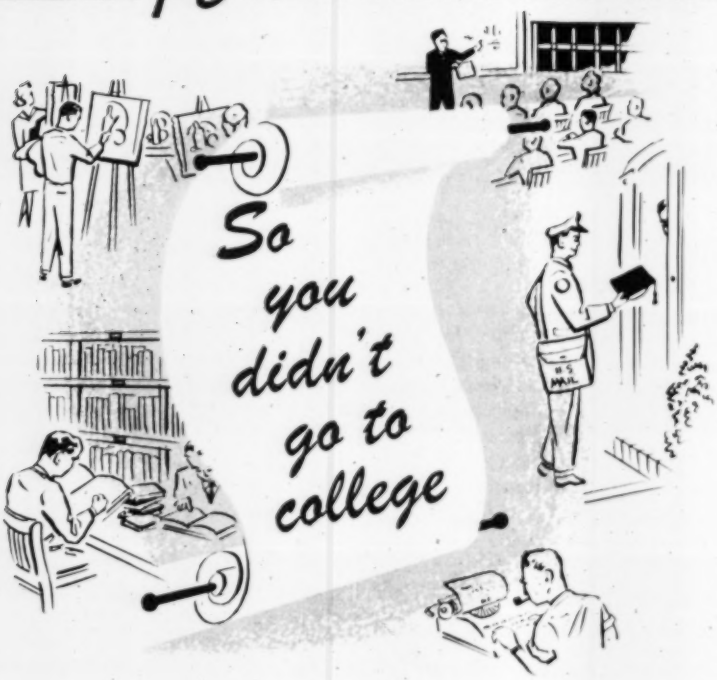
Prime of Life: Middle age or earlier is the time to start preparing for old age, says one authority who has followed his own advice. Dr. Wingate M. Johnson, 72-year-old member of the committee on aging of the American Medical Association, lists these rules for growing older gracefully: Cultivate proper habits of eating, sleeping, exercise, recreation, and work. Recognize that constant use of the brain helps keep it running efficiently. Look forward rather than backward. Cultivate mental poise. Develop wide interests—new uses for the hands and brain. Associate with younger people, and share some of your responsibilities with them.

Big Bite: Although 77.4 per cent of the firms surveyed by the Industrial Publishing Corporation allow employees to make on-the-job collections for gifts, charities, and other purposes, 74 per cent of the companies reserve the right to judge whether or not there's a sufficient reason for the solicitation. Only one organization in five uses company money to supplement the collections. More than half—54 per cent—feel that employees would be glad if the company put a stop to the solicitations.

Merrily We Roll Along: One out of seven American workers is employed in some kind of work designed to keep things moving on U. S. highways. Approximately 5.6 million people drive trucks and buses, and more than 1.9 million people deal in, and service, motor vehicles. Production of cars, buses, and trucks, as well as their parts and tires, occupies more than 900,000 workers; and another 280,000 work for highway departments. Some 300,000 are engaged in producing gasoline and oil, and 600,000 more work in associated industries and services.

Private Lives: Interference with the private lives of workers, as well as dissatisfaction on the job, is an important cause of employee turnover. The University of Michigan's Research Center for Group Dynamics reports that the extent to which the job interferes with family and community satisfactions may determine whether or not a worker will quit. Even when an employee is happy at his work, he may quit if it keeps him from receiving satisfactions from other sources.

YOUR *Personal* MANAGEMENT



By Jerry Klein and Bill Fisher, Jr.

AT 36, RALPH KEATING thought he was through.

For 18 years, he had served the same company and, he thought, served it well. Forced by family circumstances to start work young, he began as a messenger, transferred to production, then climbed slowly up the ladder to foreman. He considered himself a self-made man. As the business became more difficult over the years—new machines to operate, new methods to learn—he had picked up enough knowledge—and seniority—to hold his own.

Then it happened: When an opening for promotion occurred, Ralph was passed over. The man who got the job, Ralph was certain, was "one of those college boys" who had been joining the firm in increasing numbers.

Actually, Ralph was mistaken; his competitor wasn't a college graduate. Both men had come up the hard way. But through night school, a correspondence course, some lunch-hour and afterwork study, Ralph's competitor had garnered the extra qualifications to rate the higher job.

A college degree may be helpful, but it is by no means necessary for success. There is, however, a single essential characteristic shared by most successful men and women—the determination to learn.

Most people don't go to college

It's true that a college education is more available today than ever before. Since 1900, the American college population has increased tenfold; today, there are more than three million college students.

But let's look at the other side of the coin:

More than 60 per cent of the U.S. population over 25 years old has *not* gone further in school than the eighth grade.

About 29 per cent has spent some time in high school—or graduated.

Only 11 per cent has gone to college or beyond. And these few people don't even come close to filling today's needs for supervisors, executives, scientists, and engineers.

The need for highly trained people has been increasing steadily for the last 40 years. This is reflected, in part, by the decline of unskilled workers (from 36 per cent of the workforce in 1910 to about 19 per cent in 1950), as well as the increase of skilled and semiskilled employees (from 15 to 23 per cent in the same length of time).

Now automation is expected to increase the demand for skilled workers even more. It is creating new jobs that will require expert supervision. General Mills has listed at least 23 new jobs created by automation. Special skills and techniques—but not a college degree—are required to perform each one.

Thus, jobs are moving ahead. And for most people, how they earn a living seems the most important concern of their lives. It determines where they live, what kind of house they live in, even—to some extent—how they spend their leisure time.

Not for bread alone

Education doesn't serve only to increase income, however. It also increases people's understanding of themselves, their friends, their world neighbors; it heightens their ability to lead full lives, to be of community service. Developing a broader, more dynamic approach to life, and acquiring new skills in grasping and communicating ideas, are the chief benefits of education. And these benefits can be acquired off campus.

This article was condensed from *So You Didn't Go to College!*—a pamphlet published by the Public Affairs Committee, 22 East 38th Street, New York 16, N. Y. Available from them for 25 cents for single copies; special rates for quantities.

In fact, contrasted with a boy who goes to college just to play football or because his parents sent him, the self-educated man tends to get more out of his training. His greater age and maturity frequently give him deeper experience with the problems of living—and a greater curiosity to solve them. There is a definite advantage to education *throughout* life.

The purpose of an education, then, put as simply as possible, is to gain a greater understanding of the world around us.

How to do it

The question is, "If you haven't gone to college, how can you achieve that understanding?" The answer is easy. The information necessary to understanding is available to everyone. Much of it is in books. Some is in current newspapers and periodicals. One way to self-education is a planned reading program.

Reading lists are available at every library. The librarian may suggest, for instance, something like The Great Books discussion program, developed by the University of Chicago. This is a 12-year reading plan in which each participant reads a book, then discusses it with a group. Great Books programs are often conducted by libraries, civic groups, or neighborhood clubs.

Other schools and universities, too, have similar programs, with lists of suggested reading. New York's Columbia University calls its course "Contemporary Civilization."

Organizing your reading program will help you get the most out of it. No two people will suggest the same books exactly, but almost any list of great novels, for instance, will include works like Jane Austen's *Pride and Prejudice,* Henry Fielding's *Tom Jones,* Nathaniel Hawthorne's *The Scarlet Letter,* Marcel Proust's *Swann's Way,* William Thackeray's *Vanity Fair,* Leo Tolstoi's *War and Peace,* and Mark Twain's *The Adventures of Huckleberry Finn.* These novels—and others like them—will not only provide fascinating reading, but will also lay the basis for a greater understanding of the world we live in. Books like H. G. Wells's *The Outline of History* will help open up the storehouse of knowledge of man's past. *Mathematics for the Million,* by Lancelot Hogben, offers a basic understanding of mathematical science. And your reading can be further directed by books like *Reading for Enjoyment,* by Donald MacCampbell.

A truly educated man will also try to find out about the world of today through a really good daily newspaper like *The New York Times,* the *Christian Science Monitor,* the Washington *Post and Times-Herald.* For extra stimulus, it might be worth while to subscribe to a weekly magazine of opinion and a monthly publication.

Discussion groups and reading courses also help broaden horizons.

Councils on World Affairs in more than 100 cities, for example, have conducted discussion groups on world politics, based on some of the world's greatest political writings. For millions of men and women all across the country, the road to vocational advancement and intellectual broadening has been opened by spare-time courses in an endless variety of subjects. In a phrase—adult education.

Some who made the grade

Self-education can help you to achieve your goals, to become the kind of person you want to be—provided you're willing to make the effort.

Consider, for example, General David Sarnoff, board chairman of the Radio Corporation of America. When his father died, General Sarnoff, then 15, quit school to help support his mother, three brothers, and sister. After a stint at selling newspapers, he decided to become a reporter, went to what he thought was the New York *Herald* building to apply for a job. When he came out, he had a job all right—as a $5-a-week messenger. But not with the newspaper—with the cable company whose offices were next door. For, before coming out of the building he had mistakenly entered, young Sarnoff had discovered something that fascinated him—telegraphy.

The young man spent his first savings on a secondhand telegraph instrument and books on Morse code. After that, he spent nights studying wireless techniques, weekends working in a telegraphic laboratory. Today, he is one of the most important men in the field of communications.

"The important thing in a man's career," General Sarnoff has said, "is to find that place where his abilities and inclinations are matched. Chance may place a person in that position, but if he recognizes his luck, works hard, and takes advantage of the opportunities, he can't help but succeed."

There are many other self-educated people. W. K. Kellogg, who made millions manufacturing breakfast food, left school at 14. Henry J. Kaiser, the industrialist, got only as far as the eighth grade. Conrad Hilton, the hotel man, attended school sporadically until he was 17 and then quit. Labor leader John L. Lewis never got past elementary school. Novelist Ernest Hemingway, author of some of America's most noted fiction; newspaperman Roy Howard, president of Scripps-Howard Newspapers; merchant J. C. Penney, head of the retail chain that bears his name; Broadway star Katharine Cornell—these are just a few of the eminent people who never went beyond high school. Arthur Morgan, former head of TVA, was a college president who did not go to college. And there are thousands of others who have enriched their lives through off-campus education.

To begin your self-education, you might first talk it over with the director of your public school's adult-education program, the principal of an evening high school, the local librarian, the dean (or director of admissions) of a college that maintains an extension program, or your minister.

Where to get help

Here are some of the possibilities they may suggest:

University extension courses: One of the most popular forms of adult study, extension courses are what their name implies, an extension of university classrooms into everyday community life. Extension means many things—correspondence courses, lectures, summer schools, press and publication services, evening schools, lending libraries, film and visual-aid programs, conferences, institutes, broadcasting services, and short courses. And this varied fare is designed primarily for adult students who work during the day. Many courses do not carry college credit, but it is possible to earn academic credits in evening and Saturday courses.

Extension classes generally attract adults. Approximately 92 per cent of the students are over 20 years old; two out of three are married; eight out of ten have at least one child. Nine out of ten are graduates of high school.

Extension educators provide a wide choice of job-related courses to fit the needs of students who sandwich studies in with a normal work routine. At Purdue, for example, an extension course trains engineering aides. The extension service of the College of the City of New York has helped solve the sitter problem for parents who want to continue their education by providing special arts-and-crafts classes for their 7-to-12-year-old children.

Elementary and high-school education: Many public elementary and high schools offer instruction virtually around the clock. In New York City alone, almost 40,000 adults attend evening classes in more than 100 elementary schools throughout the city's five boroughs.

More than 25,000 other New Yorkers, not working toward diplomas, participate in informal evening programs featuring dance, handicrafts, sports, music, cooking, and other spare-time skills. Thousands of others learn new trades or improve their mastery of daytime jobs.

New York City's adult-education program is not unusual. In Des Moines, Iowa, for instance, you can learn acetylene welding, architecture, and radio repair at night. The Baltimore evening program will teach you income tax and insurance, English, or citizenship. A discussion series for mothers of adolescents is one of many courses offered in Jackson, Michigan. If you live in Stamford, Connecticut, there's "Good Grooming for Women," in

addition to many more conventional courses. In San Jose, California, where one out of every six adults is registered, the city offers more than 100 courses. Birmingham, Alabama, has ten centers where parents and children often attend the same classes.

Home-study courses: Some two million people throughout the world are taking home-study or correspondence courses today. These fall into two general categories—those offered through 150 accredited colleges and universities, and those provided by some 450 privately operated correspondence schools. One of the latter, the International Correspondence Schools of Scranton, Pennsylvania, has cooperative training arrangements with close to 5,000 business and industrial organizations.

Perhaps the major advantage of correspondence courses is that they provide education when no other form of it—such as a university extension course, a local lecture group, or library study—is available. Thus, military personnel stationed in remote areas, for example, can pursue studies via the U.S. Armed Forces Institute and the Marine Corps Institute. A major disadvantage is that these courses sometimes are not accepted by colleges as accredited study.

Correspondence students pay as little as $25 or as much as $500 per course, depending on the subject matter and the number of lessons included. At-home students spend an average of ten hours a week on their homework. How quickly they complete their studies depends, of course, on the subject matter—plus their own ability. Courses available today cover a wide range of subjects, from atomic energy to short-story writing.

Agricultural Extension Service: The Agricultural Extension Service operated by the various land-grant universities is the largest single tax-supported adult-education institution in the world. It has a staff of over 10,000 to service the enrolled students, most of whom are rural residents. In addition to farm vocational subjects, the service's rural teaching today includes subjects like food processing, home decoration, child care—even music and art.

Industry and business: Management was largely responsible for the exceptional and highly effective on-the-job training courses instituted during the war. Many corporations discovered then that education not only increases production and quality; it also builds workers' job satisfaction. As a result, many corporations continue to offer courses in both leisure-time and vocational subjects, sometimes at company expense. Information about such courses is usually available from the companies' personnel departments.

YMCA-YWCA programs: Most "Y"s have adult-education programs and many offer subjects that have

direct vocational application: for example, "Dictation for Medical Secretaries," "Human Relations in the Office," "Effective Letter Writing," "Rapid Reading and Comprehension," "Persuasive Selling." One large YMCA currently offers 90 different classes.

The "Y" has long stressed the importance of integrating people into group and community activities, and therefore it also offers a wide range of avocational classes. Subjects range from fancy diving to ballroom dancing, from current events to color photography, from language courses to political debate.

Other possibilities: Additional courses, lectures, and seminars are often provided by service organizations (like Lions, Rotary, and Kiwanis Clubs), by community groups (like Parent-Teacher Associations, Leagues of Women Voters), and by church organizations. Settlement houses have sound educational programs, generally on an informal basis.

A broadening field

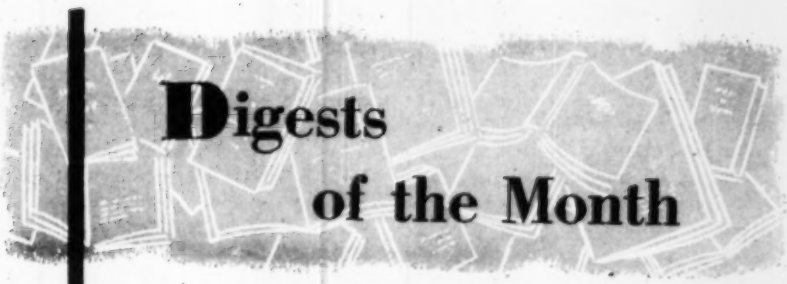
Adult education has become an astonishingly broad field. More and more people have found that their new ideas can be put into effect —to increase their understanding of the world, to get better jobs, or simply to make better use of their leisure hours. Self-educated adults are discovering that a college diploma is less important than ability, imagination, and energy. ♦

More White Collars

WHITE-COLLAR WORKERS are still increasing both in number and in proportion to the nation's workforce, according to a new release from the U. S. Census Bureau. The number of professional, clerical, sales, and administrative employees rose from 19.8 million in January, 1947, to 26.3 million in January, 1957, an increase of 33 per cent, while the rest of the labor force increased less than 3 per cent. At the beginning of this period, white-collar workers made up 34 per cent of the nation's workforce; at the end, 40 per cent.

Even in heavy industry, usually considered primarily a field for manual workers, the number and proportion of nonproduction jobs are going up. Nearly four million people in manufacturing plants hold white-collar jobs.

What has caused this gradual rise? According to the Department of Labor, the most important factors are: 1) increased research-and-development activity and the growing use of technically trained workers; 2) more new plants and equipment in industry; 3) more paperwork to meet the needs of management and government, as well as an increase in service and organization functions within the company.



Digests of the Month

Appraisal Talks: Pointing the Way to Better Performance

HOLD APPRAISAL TALKS with your subordinates," say the experts. "Makes sense," most managers reply. But what do you say to the man who's fallen down on the job—and gets angry when you tell him so? Or the poor guy who tries hard, but will never be much better than mediocre?

These are the real reasons that most appraisal programs fail. Under the best circumstances it's downright hard to sit down calmly, look a man in the eye, and tell him what you think of him. That's why these hints on handling appraisal talks may be valuable. The examples are adapted from a booklet called *How Am I Doing Talks*, prepared by General Mills, Inc. (Minneapolis).

1. *The man who's getting older.* Don't assume that just because he's been around for many years, he's out of the running. He's probably less concerned about promotion and transfer than are the younger workers—but much more concerned about his ability to hold his present status. His ambitions may be more modest than a young man's, but his worries are likely to be greater. Yet he may have difficulty expressing himself, especially to a younger person or a person in authority. The big problem is likely to be getting at his true feelings and setting his unjustified fears at rest. Go out of your way to give him encouragement, if you can honestly do so.

If he's nearing retirement age, what is his attitude toward leaving work? Is he making plans? Is he facing the future realistically? Discuss these questions frankly and helpfully so he'll understand and make full use of company benefits available to him.

2. *The failing man.* It's no fun to tell a man he isn't doing well. But it's part of the supervisor's responsibility. To be genuinely helpful, face the problem at the earliest date, while there's still hope of saving the situation.

Don't base your reluctance on the belief that the other man will be surprised and hurt to hear the news. Often he feels keenly that he's not

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doing the job properly and welcomes a chance to bring the matter out in the open.

Sometimes you can arrange a transfer to another job for which he's better fitted. Such a transfer may lift a load off his mind. Sometimes, too, a few pointers can show him the way to better performance in his present job.

Your attitude throughout should be helpful, not critical: "How can we whip this thing together?" Not "Here's where you're wrong."

Get the man to talk. Help him to solve his own problem. You probably can't solve it for him, but you can help him do so for himself.

3. *The man who's just so-so.* Some supervisors don't know what to do with the so-so man—the fellow who isn't entirely satisfactory, but is not clearly failing.

The problem may not, however, be nearly as intangible as you think. Get his side of the story—how does he feel about the job? Is he happy in his work? What are his plans for the future?

If your views are somewhat vague, try to build the interview around his ideas.

4. *The man who won't talk.* Sometimes you'll find a worker who won't open up. He answers direct questions in a few words, but he doesn't enter into the conversation freely, even when you encourage him.

Why is he unresponsive? Is he nervous? Is he overcourteous or suspicious? Is he angry but restraining himself? Is this just his nature?

Try to find anything he will talk about even if it's not related to the interview. Watch for any flicker of interest in what you're saying, then get him to talk about that. After he's started on some other topic, he may turn freely to the subject at hand.

Ask his opinion about something. Show a special interest in what he says. Be generous in complimenting him on what he has done well. Go back over the reasons for the discussion and see if he disagrees with any part of your program. Be friendly.

But don't try to accomplish too much in one discussion. Make a reasonable effort, then set up another meeting.

5. *The trigger-tempered man.* Some people can't stand even constructive suggestions. They become angry even if you're tactful.

Let this kind of employee get it off his chest. If you argue, or show your authority, or become angry, you may win, but you won't change his attitude or bring about improvement.

Be a good listener. You don't have to agree with him to avoid disagreement, but if you remain calm, you're in a better position to understand and help him.

When he calms down be sure he understands that you won't hold this against him. Go out of your way to show it. Don't expect to accomplish everything at one sitting. Try to set up another discussion soon.

6. *The man who wants out.* Sometimes you discover during an interview that a man wants to quit. This can be a serious problem, especially if he's a man you want to keep. Find out why he wants to leave. Maybe all he needs is a chance to sound off. On the other hand, if he has a valid

complaint, perhaps you can correct it. Don't be afraid to tell him that you want him to stay. Some employees talk about leaving the company only because they're not sure they're wanted or where they stand.

7. *The eager beaver.* Some men expect commendation to bring an immediate raise or promotion, or they overemphasize rewards in other ways.

Remind the eager beaver that raises are given for merit—and at reasonable intervals. If he wants a promotion, tell him they go to the best-qualified men as openings occur. Show him the need to qualify for promotion. Be sure he understands that it may be some time before an opening, that you're making no promises. If he deserves rewards, but you can't provide them, lay the cards on the table.

8. *The yes-man.* Some men agree quickly to avoid emphasis on the need for improvements. Others do it to avoid criticism.

In this case, make sure your man's agreement is sincere. If so, strongly emphasize what he must do to improve. You'll probably have to make direct suggestions. Outline how you intend to follow up on improvement plans. Close attention may be the very thing he needs.

9. *The unimproved man.* You may be ready to give up hope on this one.

Talk frankly and directly about whether he's on the right job and how you might help him to a different job where he can succeed. It may be a shock at first, but it's no favor to a man to leave him in a job where he's misplaced. And it's harmful to the rest of the organization. Discuss, too, any assets he may have to offer in a different job.

10. *The man who wants to rise.* The receptive man who wants to improve may be surprised at some of your opinions about him. But he's usually positive and friendly, not defensive or antagonistic. Show him how he can improve and grow. His reaction and your ability to help him should combine to give you real satisfaction.

11. *The outstanding man.* It's usually easy to talk with the outstanding man. You can be sincerely complimentary, and the meeting will probably be pleasant.

Examine your own motives. You may wish, perhaps selfishly, to hold onto this man—to sell him the advantages of staying where he is—to warn him about the risks of changing departments.

But the greater his abilities, the greater your obligation—to him and to the company—to see that his abilities are used to greatest advantage. Sometimes that points to a different job; sometimes he'd be better off staying in the same department.

You might say: "How can I help you? Tell me about your plans. Maybe I can lend a hand."

• FACTORY MANAGEMENT AND MAINTENANCE
Vol. 115, no. 12, p. 129:3

THE BIG SHOTS are only the little shots who keep shooting.
—CHRISTOPHER MORLEY

The Making of Ideas

ORIGINALITY IS THE CAPACITY to come up with new ideas that work. Almost everyone has originality, to a greater or lesser degree. With the proper approach, anyone can create new things or have new ideas.

Carl Rogers, psychologist at the University of Chicago, points up these qualities that are conducive to creativity:

1. Openness to experience. The creative person must be flexible enough to take in all kinds of experiences at work, at home, and at play, and shuffle them so that unusual combinations and new ideas will appear. He must be awake and open-eyed, aware of everything going on around him. The boundaries between his perceptions, beliefs, and ideas should be flexible so that crosscurrents and contacts can occur readily.

2. Internal evaluation. He is not too sharply affected by the attitudes of others. He can be unconventional, he can compare and evaluate for himself. He can release his mind from current anxieties and pressures so that when unusual ideas strike him, he can judge them for himself.

3. Ability to experiment with elements and concepts. A person doing a jigsaw puzzle cannot expect to grasp the whole picture at once. He must have the psychological freedom and zest to try this and that, fumble about, fit different parts together, and gradually watch the scheme take shape. Such a person won't become disgusted with slow progress; he continues to play with ideas until the picture is clear.

These qualities cannot be developed easily or quickly; they can be achieved only gradually, and often just a step at a time.

Using a series of questions often helps. This technique, advised for work simplification, office-methods improvement, and cost-reduction programs, can assist people consciously toward originality. Here are some questions which can be asked about any activity that might be improved:

What? What is being done? What is its purpose? Is it necessary? Can it be eliminated? Are there other activities that will accomplish the same result?

Where? Where is the activity performed? Why is it done there? Could it be done somewhere else better or more quickly or easily? Could it be combined with another activity elsewhere?

When? When is the activity performed? Why is it done then? Would another time be better? Could it be done in a different sequence or combined with another activity?

Who? Who does it? Why is it assigned to him? Who else could do it? Can a less skilled person do it? Can it be combined with someone else's work?

How? How is it done? Why is it done that way? What other ways are there? Are there easier ways? More efficient ways?

Alex Osborn, who has written extensively on imagination and originality, suggests this group of questions:

1. Put to new uses? New ways to use as is? Other uses if modified?

2. Adapt? What else is like this? What other idea does this suggest?

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Does the past offer a parallel? What could be copied? Whom could I emulate?

3. Modify? New twist? Change meaning, color, motion, sound, odor, form, shape? Other changes?

4. Magnify? What to add? More time? Greater frequency? Stronger? Higher? Longer? Thicker? Extra value? Plus ingredient? Duplicate? Multiply? Exaggerate?

5. Minify? What to subtract? Smaller? Condense? Miniature? Lower? Shorter? Lighter? Omit? Streamline? Split up? Understate?

6. Substitute? Who else instead? What else instead? Other ingredient? Other material? Other process? Other power? Other place? Other approach? Other tone of voice?

7. Rearrange? Interchange components? Other pattern? Other layout? Other sequence? Transpose cause and effect? Change pace? Change schedule?

8. Reverse? Transpose positive and negative? How about opposites? Turn it backward? Turn it upside down? Reverse roles? Change shoes? Turn tables? Turn other cheek?

9. Combine? How about a blend, an alloy, an assortment? Combine units? Combine purposes? Combine appeals? Combine ideas?

Everyone has a share in originality. The manager's responsibility, to himself as well as to his company, is to seize the opportunity for creativity and use it to the fullest. An open and questioning mind is the first step toward new ideas.

Joseph H. Jackson
THE OFFICE
Vol. 46, no. 12, p. 6:9

Do's and Don'ts in Nondirective Interviewing

NONDIRECTIVE INTERVIEWING is a technique designed to obtain information by encouraging the worker to talk freely. The success of such an informal session depends on a warm, relaxed atmosphere. Here are some tips on how to achieve this atmosphere, as suggested by the Western Electric Company:

1. Listen to the speaker in a patient and friendly, but intelligently critical, manner.
2. Don't display your authority.
3. Don't give advice or moral admonitions.
4. Don't argue.
5. Talk or ask questions only under these conditions:

—to help the worker talk.
—to relieve any fears or anxieties on the part of the speaker.
—to praise the interviewee for reporting his thoughts and feelings accurately.
—to veer the discussion to some topic that has been omitted or neglected.
—to discuss the meaning of certain comments, when they can be interpreted in several different ways, or when additional important information can be obtained.

Turnover: A New Look at an Old Problem

MANAGERS ARE DEVELOPING a fresh viewpoint on the old problem of employee turnover.

Three ideas distinguish the new approach:

1. The time-honored system of measuring turnover in terms of a gross statistical rate is meaningless and misleading. "Managers," says Professor Sumner Slichter of Harvard, "should pay less attention to quantitative measurement and more attention to qualitative analysis of turnover."

2. Reducing the turnover rate to zero—the theoretical goal of many supervisors—is as undesirable as it is unattainable. Some turnover can be healthy; it brings in new blood and prevents stagnation.

3. Money alone can't eliminate harmful turnover. Irritating situations which are easily remedied may be more important than pay scales in determining how many skilled workers you lose.

Basic to all three of these ideas is the conviction that management must dig below the surface of the turnover rate. You need to know not merely how many employees are quitting but who, and why. Here are some methods you can use:

1. A breakdown of turnover into job categories.

The cost of turnover varies sharply with the type of employee involved. Figuring both direct and indirect costs —such as recruiting, training, orientation, paperwork, lost production time —one company computed the cost of losing a laborer at $126.42, and a semiskilled employee at $556.92. But when a skilled worker who had completed a four-year apprenticeship course moved on, the cost jumped to $18,778.01.

You don't have to make a detailed analysis to recognize that the loss of an engineer, a technician, or a skilled operator is—other factors being equal —much more costly to the company than the loss of an unskilled worker.

But don't rush to the conclusion that it is cheaper to hire and train a new worker, even in a low-skill occupation, than to provide salary increments, extra vacations, and the other benefits that accrue to veteran employees. It just isn't so.

2. The quality of the employees who are leaving the company.

"It makes a great deal of difference," Professor Slichter points out, "whether you are losing your best or your worst employees." A turnover rate that seems high may prove to be desirable if it consists largely of misfits and marginal workers.

But if your really promising technicians or your above-standard production workers are the ones who are leaving, you may have serious trouble even if the over-all quit rate is low.

3. The experience level of employees who quit.

By studying the length of service of departing employees you can find clues to whether your department is undergoing more or less normal turnover, or whether something is seriously wrong.

Studies by International Harvester, Jersey Standard, and others show that a high degree of mobility is charac-

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teristic of Americans during their first five years of job experience. (About half the employees who quit International Harvester were in their first year of experience.) After five years, employees tend to become much more stable. They don't change jobs without a good reason. Therefore a high turnover rate among new employees, while it can be and usually should be cut, is not as alarming as a high turnover rate among the veterans.

If you decide that the turnover rate is too high in a particular area, attack the problem with a rifle instead of a shotgun. Try to pinpoint the specific reason or reasons that each of these good men is deserting you. The reasons may vary substantially with their occupation.

The federal government recently conducted a survey of factors contributing to job satisfaction among scientists and engineers. Those employed in private industry rated interest potential as the number-one factor in determining whether they stay put or change jobs. They gave second priority to integrity of management, third to opportunity to move up in the organization. Pay ranked sixth, which again seems to indicate that you can't hold onto scarce technicians merely by waving more money under their noses.

Many studies have been made of the causes of high turnover among production workers. The principal conclusion is that managers should never assume they know why a worker quits. The real reasons are seldom obvious and are rarely disclosed in exit interviews, where a departing worker may disguise his true feelings lest he jeopardize the recommendation he'll need to get another job.

Sometimes you can locate the trouble simply by talking to a few employees, but occasionally you may have to investigate for yourself.

A drive-in-restaurant chain had a high turnover among unloaders—employees who stand at the end of a conveyor belt removing trays of dirty dishes. Wage raises failed to make an appreciable dent in the quit rate. Exit interviews yielded a confusing variety of reasons for leaving.

Finally, a manager decided to spend an hour in the kitchen unloading trays. He developed a bad backache from bending over.

He went back to the office and arranged to have the conveyor belts raised by one foot. The turnover rate dropped to normal as soon as the job was completed.

Dozens of other cases could be cited, in which relatively simple and inexpensive changes in working conditions have eliminated serious turnover problems.

Some companies have found that the best point to combat high turnover is in hiring. By studying the traits of their most stable employees, and comparing these with the traits of employees who quit after a short time, they come up with a sort of profile of the type of person most likely to stick with a particular kind of job.

Thus an airline finds that young, unmarried girls who have not gone to college are fine prospects for stability as ticket agents. Male college graduates, on the other hand, are rarely content to stay in an agent's job.

An industrial firm finds that married men who own their homes and have friends in the shop are good

bets for skilled-mechanic jobs which require long on-the-job training. At the opposite extreme, youngsters under 20 are likely to skip the job after they've learned the trade.

High pay scales and liberal fringe benefits are valuable in reducing employee turnover, of course. Money certainly is important.

But when you know that your wage rates and employee benefits are at least competitive with other firms in your area and industry, you can look elsewhere for turnover causes and cures.

• *Louis Cassels and Raymond L. Randall*
NATION'S BUSINESS
January 1958, p. 34:5

Handicapped Workers on the Job

MORE AND MORE COMPANIES are beginning to realize that physically handicapped workers, properly trained and properly placed, have a place in business and industry. In 1957, more handicapped people were given jobs than in any previous year in history. Many organizations that formerly had rigid rules against employing the handicapped now consider physical disability only a minor drawback.

The public program of vocational rehabilitation used to concentrate primarily on people with less severe disabilities, but now physical and vocational training are offered to many workers who were considered incapable of rehabilitation just a few years ago.

In Long Beach, California, for example, a new group known as Community Rehabilitation Industries runs a community workshop of hemiplegics (people paralyzed on one side), who were previously considered unemployable.

A study published last year showed that it cost an average of $4,000 each to provide training for 31 paraplegics (people with paralysis of the lower half of the body). Three to five years after their rehabilitation, a majority of them were employed and earning more annually than the $4,000 spent on them.

A number of projects, such as one in New York being conducted by the Association for the Help of Retarded Children, are demonstrating that special sheltered workshop training can rehabilitate mentally retarded young adults who were previously unable to find employment.

These are among more than 100 programs being conducted with the aid of federal grants. Rehabilitated workers more than repay the cost of these programs, through taxes they pay on their incomes. But even more important, they are demonstrating that the great majority of the handicapped, even the most severely disabled, can be restored to employment.

• *Howard A. Rusk, M.D.*
THE NEW YORK TIMES
January 6, 1958

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Breaking Down Communications Barriers

WHAT ARE THE BARRIERS to communication? The National Industrial Conference Board has, over a period of time, asked this question of more than 750 managers representing over 500 companies.

The obstacles cited can be broken down into three major groups:

—Barriers arising from the fact that individuals are involved in communication—and individuals differ. These might be called pre-existing barriers to communication.

—Barriers arising from the department's "climate," or atmosphere.

—Barriers that are largely mechanical because they stem from lack of proper facilities or means of communication.

1. *Individual differences:* Words and actions have different meanings to different people. The fact that workers come from different backgrounds—geographic, economic, social, educational, and occupational—may mean that each puts a different interpretation on what he sees or hears. They may even use different vocabularies—newspapers and magazines often refer to "Madison Avenue jargon," the "language of Wall Street," and "shoptalk."

Because of individual or group interests, people often interpret the same words differently. A worker says that "a recession is when my neighbor is laid off; a depression is when I am laid off."

2. *Departmental climate:* The boss, the top man in the department, may feel that he supplies the ideas and that they are not subject to question. This is one-way communication—order giving rather than communicating.

There are also several common fears that stunt communication. Fear of misinterpretation, for example: "If we tell them we had a good year, they'll think we're in a better position to grant a raise." "If I ask the boss about chances for promotion, he'll think I'm dissatisfied." In many situations, communication is blocked because the speaker fears that the listener may misinterpret his message.

Distortion is another barrier. The speaker says, "Your work can be improved," but the listener hears, "Your work is no good."

Then there's fear of exposing ignorance or of having too little to offer. An employee, at any level, may deliberately withhold suggestions because he's afraid they may be scoffed at.

All these fears may be part of another fear—the fear of reprisal. Too often, an employee thinks that a frank criticism, a voiced grievance, a nonconforming opinion may mark him for unpleasant duties, cost him a raise or promotion, or even result in the loss of his job. Rather than risk reprisal, he may limit his communication to areas or remarks that he believes are guaranteed not to offend his superior.

In discussing these barriers, management representatives stress *fear* of distortion, of misinterpretation, and of reprisal. But, they emphasize, *actual* distortion, misinterpretation, and reprisal constitute even greater barriers.

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The loss of confidence that arises from insincerity is another major obstacle to clear communication.

No supervisor should ask for an employee's opinion if he really doesn't want it or doesn't care about it. Suggestions for the solution of a problem should never be solicited after the answer is already decided. For insincerity can't be hidden. The idea that management is putting on an act effectively forestalls further communication.

Lack of confidence prevails when there is distrust on either side. The speaker might say, "I'm considering recommending you for promotion"—but if the listener is suspicious, he may believe that he is being eased out by means of a switch to a dead-end job.

Essentially, suspicions of insincerity stem from the fact that people have different interests. When either party thinks the other is not genuinely concerned with his interest, communication suffers.

3. *Mechanical barriers:* Poor organization is perhaps the major mechanical obstacle to communication. Good organization requires the proper assignment and grouping of functions, and establishes proper relationships among them. It also requires the proper assignment of responsibility and authority. Organization is the basic determination of "who and what": Who does what job, who makes what decision, who tells what to whom.

As examples, consider unity of command, span of control, and levels of authority.

Unity of command means that no one in the organization should report to more than one supervisor; no one should have more than one boss. If Joe has two bosses, he may be getting conflicting information and orders, and he may be afraid of being shunted from one boss to the other when a decision has to be made.

Span of control merely means the number of positions coordinated by a single man. If Mr. Smith has too many subordinates reporting to him, some may give up before they get his ear. Those reporting to him may seek out others for advice or recommendations. Thus, Mr. Smith isn't getting all the facts he needs to do his job, and his subordinates may be getting misinformation, since the facts are not coming directly from their supervisor.

The number of levels of authority should be kept to a minimum. Delays in informal lines of communication crop up when the chain of command is cluttered with too many bosses. It is hard for information to move down the line; and it is even tougher to communicate upward.

When too many levels of authority are combined with broad spans of control, communication up, down and on the same level is often too little and too late.

Other impediments to communication cited by management people are lack of time (the pressure of events, of things to do, leaves no time for communication), and lack of training (some supervisors haven't been taught how to communicate, how to run a meeting, how to draw out an employee).

These are just samples of the many barriers to constant, automatic, and habitual communication within the department. Identifying and analyzing

the barriers is the first step toward their removal. Their structure is interlocking; remove one barrier, and several others fall with it. For example, overcome lack of confidence, and many of the fears that forestall communication will disappear with it.

Once these chief barriers are removed, will good communication automatically follow? The answer is no—but by correcting the flaws the supervisor takes a giant step toward creating a climate for good communication. Through constant practice, good policy, and sound organization, any department can achieve effective communication.

• *Harold Stieglitz*
MANAGEMENT RECORD
January, 1958, p. 2:4

Fight That Tired Feeling

ARE YOU TIRED TOO OFTEN? If you are, you have plenty of company. That old tired feeling is costing Americans millions of dollars in needless medical bills, and exacting a high price in lowered efficiency.

For some reason, tired people seldom recognize the personality changes brought about by their fatigue. Like youngsters who won't admit they're tired at bedtime, they may become unreasonable and irritable, ready to be upset by the most trivial incident. Patience and tact often give way to impetuousness and intolerance.

It's only a matter of time before cumulative fatigue becomes apparent on the job. The symptoms usually start with an inability to concentrate, a reluctance to make decisions, and a tendency to put off important matters requiring extra exertion.

There are four distinct types of fatigue. Most common and best understood is *physical* fatigue—the result of muscular exertion. The head-to-toe weariness following a day's physical work or strenuous exercise is the body's way of signaling for rest and food. It is normal and healthy.

If you ever had influenza or the grippe, you may remember how quickly you tired during the first few days after your sickness. Under the circumstances, this fatigue, too, was normal. Your body was fighting to throw off the so-called toxic effect following an infection. Periods of excessive fatigue can result also from anemia, an underfunctioning thyroid gland, or too much weight. This is *illness* fatigue.

Emotional fatigue is a much more complicated problem. It may require the help of a psychologist or minister and the assistance of the immediate family, as well as the cooperation of the patient. The cause must be found and the patient must learn how to avoid tiring situations. The process is usually long and complex.

Tension fatigue is a weariness brought about by the nervous system; it is subject to change without notice. It can come without warning and vanish quickly with a change of routine, a little excitement, or a new interest. It's not "mental" fatigue, because the brain has limitless capacity for work. Other parts of the body become tired long before fatigue hits the brain.

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Relatively few people suffer from chronic emotional fatigue. And, since supervisory work involves little muscular activity, you can probably rule out physical fatigue, too. This narrows your field to either illness or tension fatigue. Many managers suffer from the latter.

There is seldom one single cause of chronic fatigue. Often, it stems from a breakdown of living habits—a failure to observe the generally accepted rules of good health. Most chronic fatigue results from tensions arising from an imbalance of sleep, exercise, work, and play.

To get to the cause of your fatigue, first eliminate the obvious. Make certain that your organic "house" is in order. Anemia and an underfunctioning thyroid gland might be behind your trouble. Overweight is a frequent culprit. Excess pounds produce sluggishness because you use more energy lugging them around, and have little left for your job. (Conversely, "crash" dieting can also bring on fatigue.) A thorough physical examination will explore these possibilities.

Intelligent use of alcoholic drinks may aid relaxation at the end of a strenuous workday. But drinking during the day can depress intellectual functions, slow muscular action, and be responsible for afternoon sluggishness.

Smoking too much may compound your nervousness, but an occasional cigarette can furnish a brief change of routine and help to relieve your tension.

Be careful of using drugs to delay fatigue. Never take them without first checking with your physician.

Energy, like the tide, surges and ebbs during the day. Mexico's siesta, England's teatime, and our own coffee break are practical methods of combating fatigue. Tensions can be overcome with a change of routine; when you get that letdown feeling, don't fight it—just take a breather. Stop what you're doing, change the scene a bit, have a cup of coffee or tea. You'll be refreshed for a new approach to your work.

If you're still overtired too often, check your living habits:

1. Exercise is the best antidote to tension fatigue. Your minimum should be three 15-minute walks a day, supplemented by other exercise, such as golf, tennis, handball, squash, and bowling. But let your physician decide the extent of these more vigorous sports. Don't be a weekend athlete who goes out once a week for strenuous exercise to cure all his ills.

2. Too many people think sleep is a waste of time; others can't slow down enough to get adequate amounts. A good rule of thumb is about eight hours of sleep a night, modified somewhat to your individual requirements. Start relaxing at least an hour before you retire.

3. Overeating and overdieting both produce fatigue. Eat and drink moderately.

4. Next, inspect your work habits. Your tension may be caused by overwork. Overworked people who refuse to think of themselves place hardships on their co-workers, not to mention themselves and their families.

Re-examine your workload. Could a rearrangement of your time provide some relief? You might delegate more

of your work to others. Make the most of your time.

5. Finally, consider your recreation. Are you overaddicted to your work? When you leave the plant, try turning your thoughts and efforts to a hobby or to a community, church, or other interest.

And don't forget your vacation. Use it to sweep away mental cobwebs, and *relax*.

There's no trick to beating fatigue. It's just a logical organization of your day-to-day living.

*Harry J. Johnson, M.D.
SALES MANAGEMENT
February 21, 1958, p. 41:4

A Guide to Good Selection

A SELECTION INTERVIEW always presents a tough problem. How is it possible to judge a man's character and ability in one brief meeting? The answer isn't easy, but in general it's safe to say that three general areas should be uppermost in the mind of the interviewer: First, the technical skill of the candidate; second, his general experience in the same or related fields; and third, his intelligence and initiative.

Here are some of the questions that should be answered:

1. What is the candidate's mental ability? Does he think logically and efficiently? Can he think for himself? Can he get to the heart of a matter? Is he good at seeing implications? Can he acquire a sound background of knowledge and use it successfully?

2. Is he businesslike? Is he interested in the practical details of a scheme as well as in the broad principles? Can he plan the general outlines of his job, and take into account the equipment available? Can he make decisions?

3. Is he constructive and imaginative?

4. Can he express himself clearly both in his speech and in his writing?

5. Is he honest? Does he have the courage of his convictions?

6. Is he interested in his surroundings and in the people he meets? Will he get on well with his equals, his subordinates, and his bosses? Do people like him? Is he, for his age and position, a man whose judgment can be respected?

7. Does his record suggest vitality and stamina? Is he enthusiastic?

8. Is he mentally adaptable and flexible, or is his mind rigid and impervious to new ideas?

9. Has he thought responsibly about the position? Is he likely to develop an interest in the particular work of his department? Will he be loyal to his chiefs and to their policy?

Although the answers to these questions should point the way toward an intelligent decision, proper questioning alone isn't enough. Establishing an informal, relaxed atmosphere is just as important. A friendly talk will produce more results than a cross-examination.

• MANAGEMENT
(New Zealand Institute of Management)
Vol. 3, no. 2, p. 11:5

Traffic Education Is Part of Your Job

TRAFFIC ACCIDENTS are more than just an off-the-job problem. Each traffic injury costs business and industry an average of 112 man-hours—automobile mishaps are responsible for more lost time than any other kind of accident. Small wonder, then, that more and more supervisors are emphasizing the rules of traffic safety.

Traffic injuries are often more severe than other types, they usually result in more deaths, and they're more frequent than any other kind except those in the general category of "home accidents."

In terms of time, the hidden or indirect costs of a traffic accident are at least four times the direct cost (time lost by the worker because of his injury). These hidden liabilities include time spent by employees discussing the accident, time lost because a machine or a desk isn't manned, time used by personnel and payroll departments on employee records, and time spent in training temporary or additional help. An additional factor is slower productivity when an injured employee returns to work, since men involved in off-the-job traffic accidents don't receive workmen's compensation and are sometimes tempted to return to their jobs before they're fully recovered.

Safety organizations estimate that as much as 85 per cent of the opportunity for successful off-the-job-safety programs among workers lies with managers in industry. Here are some of their reasons:

1. Management speaks with authority. Accident-prevention programs conducted on the job will carry over into the employee's private life.
2. The employee group is a "captive audience," and will react favorably to safety programs once they hear the facts.

Traffic accidents cause an exceptionally large percentage of absenteeism in companies where most of the employees hold white-collar jobs. Safety education can cut down this absenteeism substantially.

Safety programs within the department can save lives, reduce injuries, and benefit industry by reducing absenteeism and therefore increasing production.

* *John I. Tucker*
NATIONAL SAFETY NEWS
Vol. 76, no. 2, p. 40:5

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Answer Key to Reading Quizzes

Selection 1, page 36:
1 b, 2 b, 3 d, 4 c, 5 b, 6 c, 7 a, 8 a, 9 c, 10 c.
Selection 2, page 39:
1 c, 2 b, 3 d, 4 d, 5 a, 6 c, 7 d, 8 d, 9 c, 10 d.
Selection 4, page 46:
1 a, 2 b, 3 a, 4 b, 5 d, 6 c, 7 c, 8 d, 9 b, 10 c.
Vocabulary Test, page 47:
1 a, 2 c, 3 b, 4 c, 5 c.

Cooling Off those Hot Spots

THE WORKER'S PHYSICAL COMFORT has a direct effect on his daily production. Dr. Lucien Brouha points out that the temperature of the work area is the most important single factor in employee health and efficiency.

At high temperatures, people tire more quickly, the heart is forced to pump faster, and normal body cooling by perspiration is ineffective. Dr. Brouha suggests these measures to improve conditions in hot work areas:

1. Efficient ventilation.
2. Insulating the sources of heat.
3. Protecting workers with screens or special clothing.
4. Developing tools or methods which allow the men to work as far as possible from the sources of heat.
5. Giving workers adequate rest periods.
6. Cooling and dehumidifying the air, if necessary.
7. Making sure that plenty of water is available.

Thirst usually lags behind water loss, so a worker's efficiency may be impaired before he feels thirsty. It's best to train your men to drink a certain amount of water each hour, at regular intervals. Salt loss can usually be offset by salting food thoroughly at mealtimes. Men who are on a salt-reduced diet should never be exposed to extreme heat.

—*Mill & Factory*

Who, Me?

A LAME EXCUSE for not doing a job well is often worse than no excuse at all. *Bindery Talk* has compiled this list of some of the lamest:

I didn't know you were in a hurry for it.
That's not my department.
No one told me to go ahead.
How did I know this was different?
That's his job, not mine.
Wait 'til the boss comes back and ask him.
I forgot.
I didn't think it was very important.
I'm so busy I just didn't get around to it.
I thought I told you.
I wasn't hired to do that!
I thought it was good enough.
They'll never notice that.

Quiet, Please

INDUSTRIAL MANAGERS can help to solve the nation's hearing problem by cutting down the amount of noise in their departments, says Fred W. Braun, vice-president and head of the department of occupational diseases and accident prevention at Employers Mutuals of Wausau, Wisconsin. Mr. Braun estimates that 20 out of every 100 newly hired workers in heavy industry already have a hearing difficulty of some kind. He suggests these simple measures as a partial solution to the noise problem:

1. Checking new machines and tools for excessive noise, and maintaining old equipment properly.

2. Substituting quieter operations when possible (for instance, using arc or flame welding instead of riveting).

3. Impressing each worker with the importance of trying to keep noise to a minimum in his own area, and encouraging him to suggest improvements.

4. Recommending the use of protective devices for the ears.

"I'd as soon loan you a hundred dollars as cut off my right fin."

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